

**AGENDA**  
**MPO Technical Committee**  
Tuesday, September 21<sup>st</sup>, 2021  
10:00 AM Virtual Meeting via Zoom

This meeting will be conducted using video/phone conferencing. Use the link below to access the meeting.

<https://us02web.zoom.us/j/87989814300?pwd=N3B3QlJQQ1RvT3ZscWdmaS9obFk2dz09>

Meeting ID: 879 8981 4300

Passcode: 334069

| Item | Time        | Description                                                                                                                                                                                                                                                                    |
|------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0    | 10:00-10:05 | <b>Attendance and Emergency Statement</b>                                                                                                                                                                                                                                      |
| 1    | 10:05-10:10 | <b>Matters from the Public: limit of 3 minutes per speaker</b><br><br><i>Members of the Public are welcome to provide comment on any public-interest, transportation-related topic, including the items listed on this agenda – limit three minutes per speaker</i>            |
| 2    | 10:10-10:15 | <b>Approval of draft meeting minutes*</b><br><ul style="list-style-type: none"><li>See <a href="#">July 20<sup>th</sup>, 2021 MPO Tech Minutes DRAFT</a></li></ul>                                                                                                             |
| 3    | 10:15-10:35 | <b>Rivanna River Bike and Pedestrian Crossing Stakeholder Engagement – Sandy Shackelford (CA-MPO)</b><br><ul style="list-style-type: none"><li>See <a href="#">SMART SCALE Round 5 Stakeholder Engagement Memo</a></li></ul>                                                   |
| 4    | 10:35-10:55 | <b>SMART SCALE Culpeper District Project Pipeline Process – Chuck Proctor (VDOT)</b><br><ul style="list-style-type: none"><li>See <a href="#">Kick-off Meeting Presentation</a></li></ul>                                                                                      |
| 5    | 10:55-11:05 | <b>North 29 Corridor Study Updates – Lucinda Shannon</b><br><ul style="list-style-type: none"><li>See <a href="#">Technical Memo</a></li></ul>                                                                                                                                 |
| 6    | 11:05-11:20 | <b>Staff Updates</b><br><ul style="list-style-type: none"><li>See <a href="#">RFP for CA-MPO Strategic Plan</a> – Sandy Shackelford (CA-MPO)</li><li>Transit initiative updates – Sara Pennington (RideShare)</li></ul>                                                        |
| 7    | 11:20-11:50 | <b>Roundtable Updates</b>                                                                                                                                                                                                                                                      |
| 8    | 11:50-12:00 | <b>Additional Matters from the Public: Limit of 3 minutes per speaker</b><br><br><i>Members of the Public are welcome to provide comment on any public-interest, transportation-related topic, including the items listed on this agenda – limit three minutes per speaker</i> |

\* A recommendation to the Policy Board and/or vote is expected for this item

**Upcoming Meetings:**

MPO Policy Board (4<sup>th</sup> Wednesday): September 22<sup>nd</sup> at 4pm

MPO Tech Committee (3<sup>rd</sup> Tuesday): November 16<sup>th</sup> at 10am

### **NOTICE of ELECTRONIC MEETING:**

This meeting of the Charlottesville-Albemarle Metropolitan Planning Organization Technical Committee is being held pursuant to *Code of Virginia* § [2.2-3708.2](#), which allows a public body to hold electronic meetings when the locality in which it is located has declared a local state of emergency, and the catastrophic nature of the emergency makes it impracticable or unsafe to assemble a quorum in a single location, and the purpose of the meeting is to provide for the discharge of its lawful purposes, duties, and responsibilities.

This meeting is being held via electronic video and audio means through Zoom online meetings and is accessible to the public with close captioning and there will be an opportunity for public comment during that portion of the agenda.

Notice has been provided to the public through notice at the TJPDC offices, to the media, web site posting and agenda.

The meeting minutes will reflect the nature of the emergency, the meeting was held by electronic communication means, and the type of electronic communication means by which the meeting was held.

A recording of the meeting will be posted at [www.tjpd.org](http://www.tjpd.org) within 10 days of the meeting.

**MPO Technical Committee Meeting**  
Draft Minutes, July 20, 2021

| VOTING MEMBERS & ALTERNATES          |   | STAFF                          |   |
|--------------------------------------|---|--------------------------------|---|
| Alex Ikefuna, Charlottesville        | x | Jessica Hersh-Ballering, TJPDC | x |
| Jeanette Janiczek, Charlottesville   | x | Sandy Shackelford, TJPDC       | x |
| Rory Stolzenberg, Charlottesville PC | x | Lucinda Shannon, TJPDC         | x |
| Kevin McDermott, Albemarle           | x | Gretchen Thomas                | x |
| Dan Butch, Albemarle                 | x |                                |   |
| Tim Keller, Albemarle PC             | x | <b>NON-VOTING MEMBERS</b>      |   |
| Chuck Proctor, VDOT                  | x | Tony Cho FTA                   |   |
| Stacy Londrey, VDOT (alternate)      |   |                                |   |
| Christine Jacobs, TJPDC              | x |                                |   |
| Stephen Johnson, Jaunt               | x | <b>GUESTS/PUBLIC</b>           |   |
| Bill Palmer, UVA                     | x |                                |   |
| Patrick Clark, UVA (alternate)       |   |                                |   |
| Juwhan Lee, CAT                      | x |                                |   |
| Wood Hudson, DRPT                    | x |                                |   |
| Sara Pennington, Rideshare           | x |                                |   |
| Richard Duran, FHWA                  |   |                                |   |
| Jeanette Janiczek, Charlottesville   | x |                                |   |

**Note:** The City of Charlottesville has declared a local state of emergency due to the COVID-19 pandemic and the nature of this declared emergency makes it impracticable or unsafe for the Thomas Jefferson Planning District Commission to assemble in a single location in the city. This meeting was held utilizing electronic virtual communication with the Zoom software application, and in accordance with virtual meeting provisions contained in Code of Virginia § [2.2-3708.2](#). A recording of the meeting was made available to the public on July 20, 2021 at <https://www.youtube.com/watch?v=akg0-qNwJu0>.

**1. CALL TO ORDER:**

The MPO Technical Committee Chair, Rory Stolzenberg, presided and called the meeting to order at 10:04 a.m. Jessica Hersh-Ballering took attendance by roll call, and certified that a quorum was present. Mr. Stolzenberg read the Notice of Electronic Meeting and Commissioner and Public Protocol.

**2. MATTERS FROM THE PUBLIC:**

- a. **Comments by the Public:** None
- b. **Comments provided via email, online, web site, etc.:** None



### **3. APPROVAL OF DRAFT MEETING MINUTES:**

**Motion/Action:** Christine Jacobs said in the info regarding the date the meeting was posted needs to be changed from March to the May date. On a motion by Chuck Proctor, seconded by Tim Keller, the committee unanimously approved the minutes, with the changes noted, of the May 24, 2021 meeting.

### **4. ELECTRONIC MEETING POLICY:**

Ms. Shackelford presented the remote meeting policy to the board for their adoption. Ms. Jacobs moved to adopt the policy as presented with a second from Kevin McDermott. The motion was passed unanimously.

### **5. SMART SCALE APPLICATION RECOMMENDATIONS (MINUTE 0.00):**

Ms. Shackelford reviewed the timeline of the application process and reviewed the projects to be considered. She also presented the projects recommended by Staff.

**Motion/Action:** After much discussion, a motion was made by Kevin McDermott that the four projects recommended by Staff (the District Avenue Roundabout, Rivanna River Bike/Ped Crossing, Avon Street Crossing and Fifth Street Crossing projects), get forwarded to the Policy Board for the MPO's Smart Scale projects for consideration. There will be public engagement on all projects but there will be additional public engagement with the District Avenue project. Jeanette Janiszcek seconded the motion. The motion passed with Wood Hudson abstaining.

### **6. ELECTRIC VEHICLE REPORT (MINUTE 1:06:20):**

Lucinda Shannon shared her Electric Vehicle (EV) Charging Station Study. The committee concurred that the recommendations were on the "general" side and that there needs to be more specific recommendations. Mr. Hudson shared that there may be funds to leverage some resources and share this link in the chat: <https://www.deq.virginia.gov/get-involved/topics-of-interest/volkswagen-settlement-agreement>

Ms. Shackelford said the budget only allowed for a more general study. Mr. Stolzenberg and Ms. Janiszcek said that this is a good start, but the technology is moving so quickly, they do not recommend more money be spent on this because they seem to think the private sector will be taking the lead on it.

Mr. McDermott passed on the study to a staff member at Albemarle stating he may have more specific thoughts on it.

### **7. RIDESHARE UPDATES (MINUTE 1:32:44):**

**AFTON EXPRESS:** Sara Pennington reported on the new Afton Express, a transit service that runs from Staunton/Fishersville/Waynesboro to Charlottesville. The service will launch in September and the fee will be free for the entire month. For additional information, visit the website at [www.aftonexpress.org](http://www.aftonexpress.org).

Mr. Johnson said the Crozet Connect and the Afton Express have many of the same stops on their route.

RIDESHARE: Ms. Pennington reported on the Rideshare promotions, including the Afton Express, Try Transit/Rideshare Week, Telework, Earth Week, and Clean Commute/Bike Month.

Rideshare is always looking for community partners and ways to work to weave in existing programs. They are seeking outside help to make sure Rideshare is positioned in the best possible way through a marketing research and implementation plan.

She shared that there is a Rideshare app in the App Store and encouraged folks to download it and start using it.

**8. MPO UPDATES (MINUTE 1:47:16):**

Ms. Shannon reported on the updated CAMPO Public Engagement Plan, required for each MPO.

Mr. Shannon also gave an explanation of and an update on the Route 29 Corridor study.

**9. ROUNDTABLE DISCUSSION: TABLED DUE TO TIME CONSTRAINTS, WITH TWO EXCEPTIONS (MINUTE 1:52:32)**

Mr. Lee said CAT is launching their new routes. There will be a meeting tomorrow (July 21, 2021) at 6 p.m. (virtual) to report on them.

Ms. Janiszcek said there will be a virtual meeting regarding the Belmont Bridge on August 11 from 6 – 8 p.m. <https://www.belmontbridge.org/2021/07/12/virtual-community-information-session-aug-11-at-6-pm/>

**10. MATTERS FROM THE PUBLIC (MINUTE 1:54:32): None.**

**ADJOURNMENT:** Mr. Stolzenberg adjourned the meeting at 12:12 p.m.

## Memorandum

**To:** MPO Tech  
**From:** Sandy Shackelford, Director of Planning & Transportation  
**Date:** September 14, 2021  
**Reference:** SMART SCALE Round 5 Stakeholder Engagement

### Purpose:

The CA-MPO has adopted a new process for the development of SMART SCALE project applications that emphasizes stakeholder engagement as projects are developed. The MPO Policy Board voted to pursue four projects at their meeting in July, identifying the Rivanna River Bike and Pedestrian Crossing as the project that would most benefit from additional engagement via a stakeholder advisory group.

### Background:

The next step in the process that has been developed by the CA-MPO will be to identify a stakeholder advisory group to inform the development of the project. CA-MPO staff has drafted the following list of potential stakeholders:

- VDOT
- City of Charlottesville Public Works
- County of Albemarle Transportation Planning
- City of Charlottesville Parks and Recreation
- County of Albemarle Parks and Recreation
- Pantops Community Advisory Committee
- Woolen Mills Neighborhood Association
- Rivanna Conservation Alliance
- Woolen Mills Development
- State Farm Property
- CAT
- Rivanna Water and Sewer Authority
- Citizen Representative
- Citizen Representative
- CTAC Liaison

The stakeholder advisory committee will meet monthly. The meetings will be open to the public, and there will be an established time at the end of each meeting for comments or questions from the general public.

The stakeholder advisory group will help CA-MPO prioritize the factors that should be considered and evaluate proposed alternatives against the identified priorities. CA-MPO staff has drafted a list of factors that will need to be considered and evaluated as an application is developed:

- ADA Accessibility
- Trail connectivity
- Utility impacts
- Floodplain
- Right-of-way impacts
- Aesthetics
- Cost
- Public impacts

**Recommendation:**

Staff will be reviewing the proposed list of stakeholders and factors with CTAC at their meeting on September 15<sup>th</sup>, and is requesting feedback from MPO Tech. Staff will be asking the Policy Board to approve the stakeholder advisory group list at their meeting on September 22<sup>nd</sup>.

If there are any questions or comments, please contact Sandy Shackelford at [sshackelford@tjpd.org](mailto:sshackelford@tjpd.org).

# VDOT Culpeper District Project Pipeline

## Albemarle County

*August 4<sup>th</sup>, 2020*

### Agenda

1. Introductions / Goal of Today's Meeting
2. VDOT Project Pipeline
3. Study Scope
4. Work Performed to Date
5. Discussion
6. Next Steps

## Goal of today's meeting is to:

- Explain the Project Pipeline
- Provide an overview of work completed to date
- Gather Stakeholder comments and discuss focus areas

## Statewide Initiative to focus on solutions to the identified VTrans Mid-Term needs with a Performance Based Planning Approach

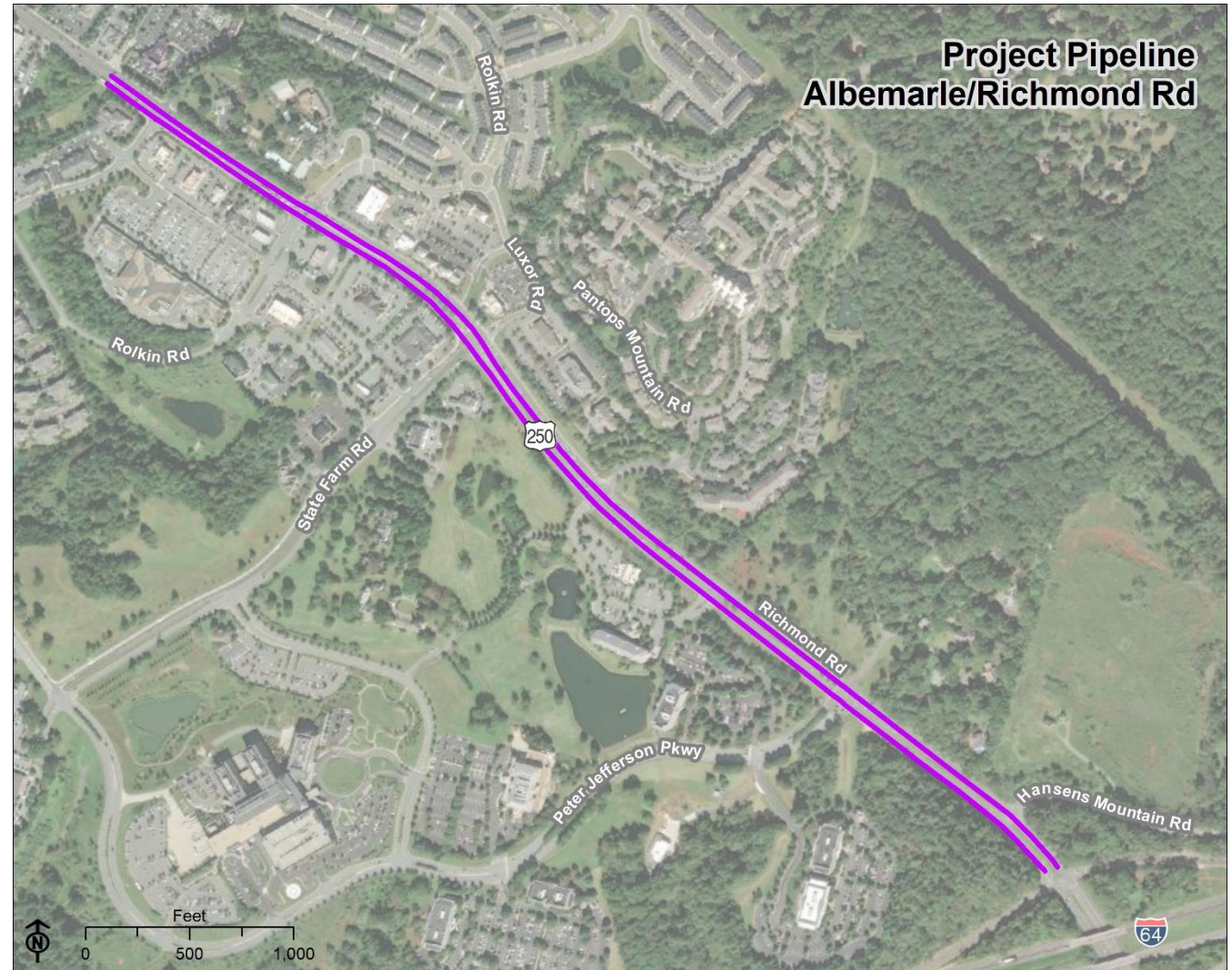
- Three-phase process to assess network needs, develop solutions, and identify funding sources
- **First Phase: Initial analysis to diagnose needs**
  - Inputs: Traffic volumes, crash data, site visits, stakeholder input, etc.
  - Outcome: Existing conditions and preliminary alternatives
- **Second Phase: Refine and perform alternative analyses**
  - Inputs: First phase data, future volumes, land-use, stakeholder input, public outreach etc.
  - Outcome: Future conditions and preferred alternative selection
- **Third Phase: Detailed concepts and estimates of preferred alternative**
  - Inputs: Design standards, Location & Design, Environmental, ROW, and Utilities
  - Outcome: Final concepts and estimates and application for funding (SMART SCALE, RS, TAP, Regional Funding Etc.)

## Overview:

- Corridor congestion and safety performance analysis
- Assess VTrans Mid-Term Needs
- Develop preliminary alternatives based on existing conditions

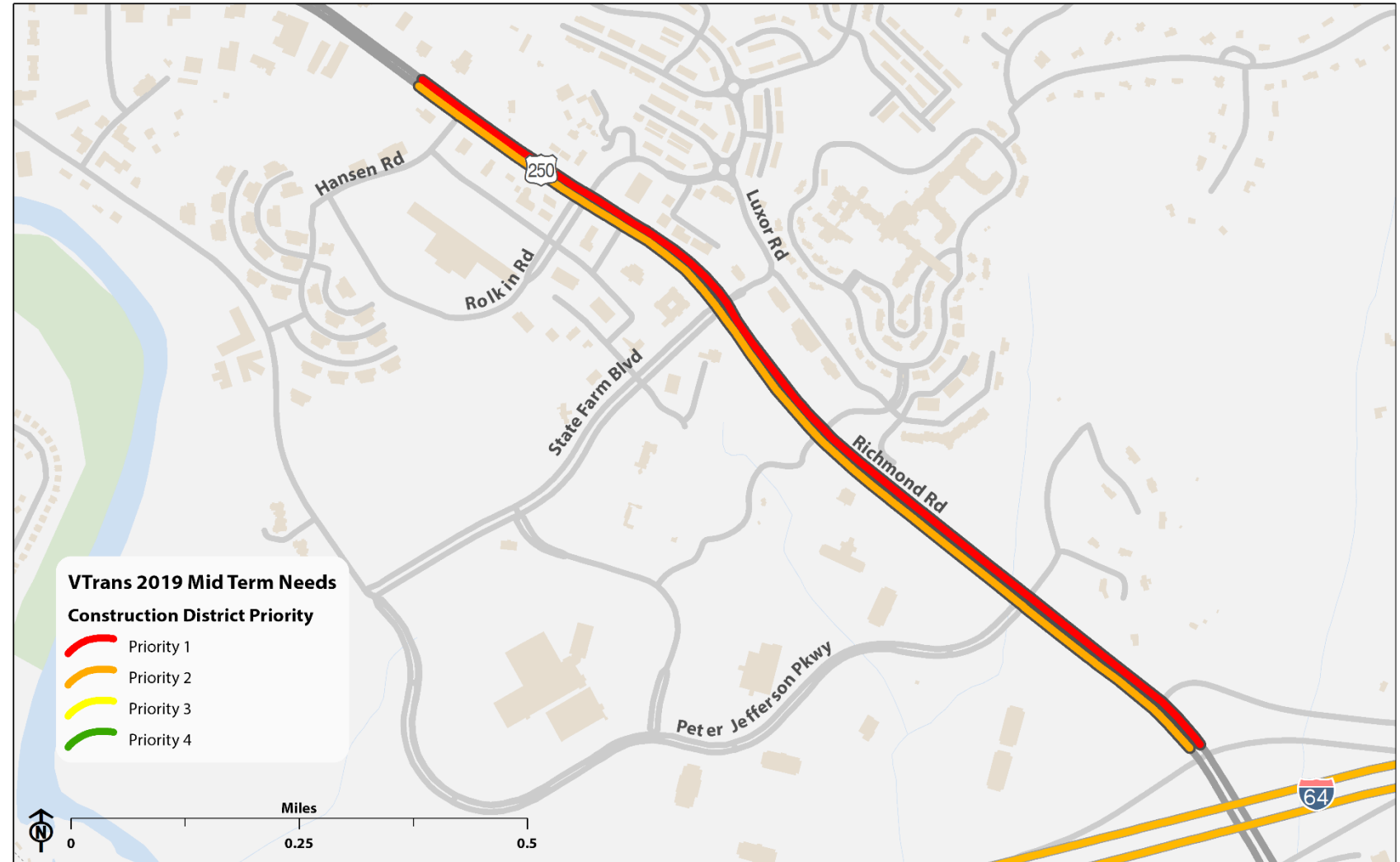
## Study Intersections:

- US 250/Hansen Road
- US 250/Rolkin Road
- US 250/State Farm Blvd
- US 250/Pantops Mountain Road
- US 250/Hilton Crossover
- US 250/Peter Jefferson Pkwy
- US 250/Hansens Mountain Road



- VTrans needs review
- Site Visit
- Crash data analysis
- Bike/Ped accommodations review and assessment
- Literature Review: Studies, Comprehensive Plans, planned projects
- Traffic counts (on-going)

- Priority 1 / 2 Corridor
- Priority is determined by but not limited to:
  - Volumes, crash data, travel times, land use, reliability, etc.
- Urban Development Area



# Safety Summary

## Total Crashes and Safety Needs

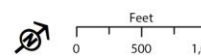
- Safety need between Hansen and Rolkin Road (PSI Rank 17)
- Safety need between Pantops Mountain Rd and Peter Jefferson Pkwy (PSI Rank 13)
- High concentration of angle and injury related crashes at State Farm Blvd and Hilton Crossover
- Rear-end crashes related to congestion. May be somewhat mitigated by Traffic Signal Synchronization and future Diverging Diamond at interchange

### Albemarle/Richmond Rd Crash Density

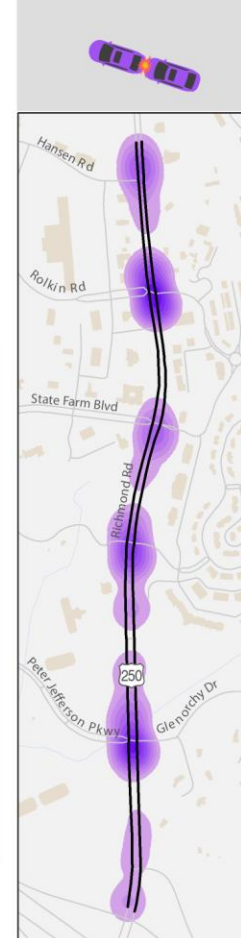
#### All Crashes



#### Number of Crashes By Type



#### Rear-End Crashes



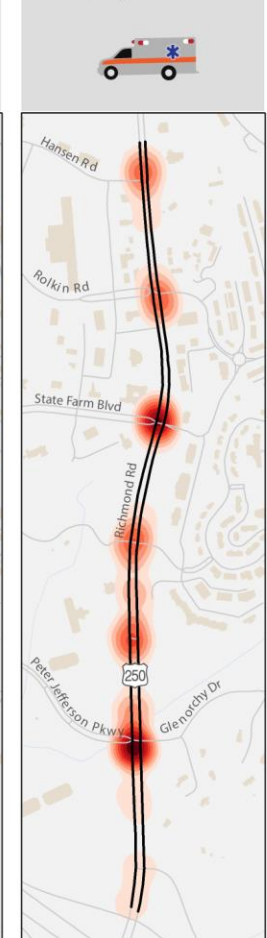
#### Angle Crashes



#### Lane Departure Crashes



#### Injury Crashes



# Safety Summary

## Equivalent Property Damage (EPDO) Intersection Totals

Crashes weighted based on crash severity SMART SCALE KABCO Scale

| KABCO | Description              | Weight |
|-------|--------------------------|--------|
| K     | Fatal                    | 85     |
| A     | Suspected Serious Injury | 85     |
| B     | Suspected Minor Injury   | 10     |
| C     | Possible Injury          | 5      |
| O     | Property Damage Only     | 1      |

Crashes grouped based on functional area of intersection

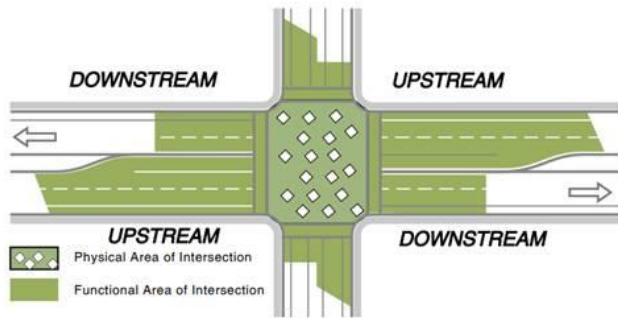
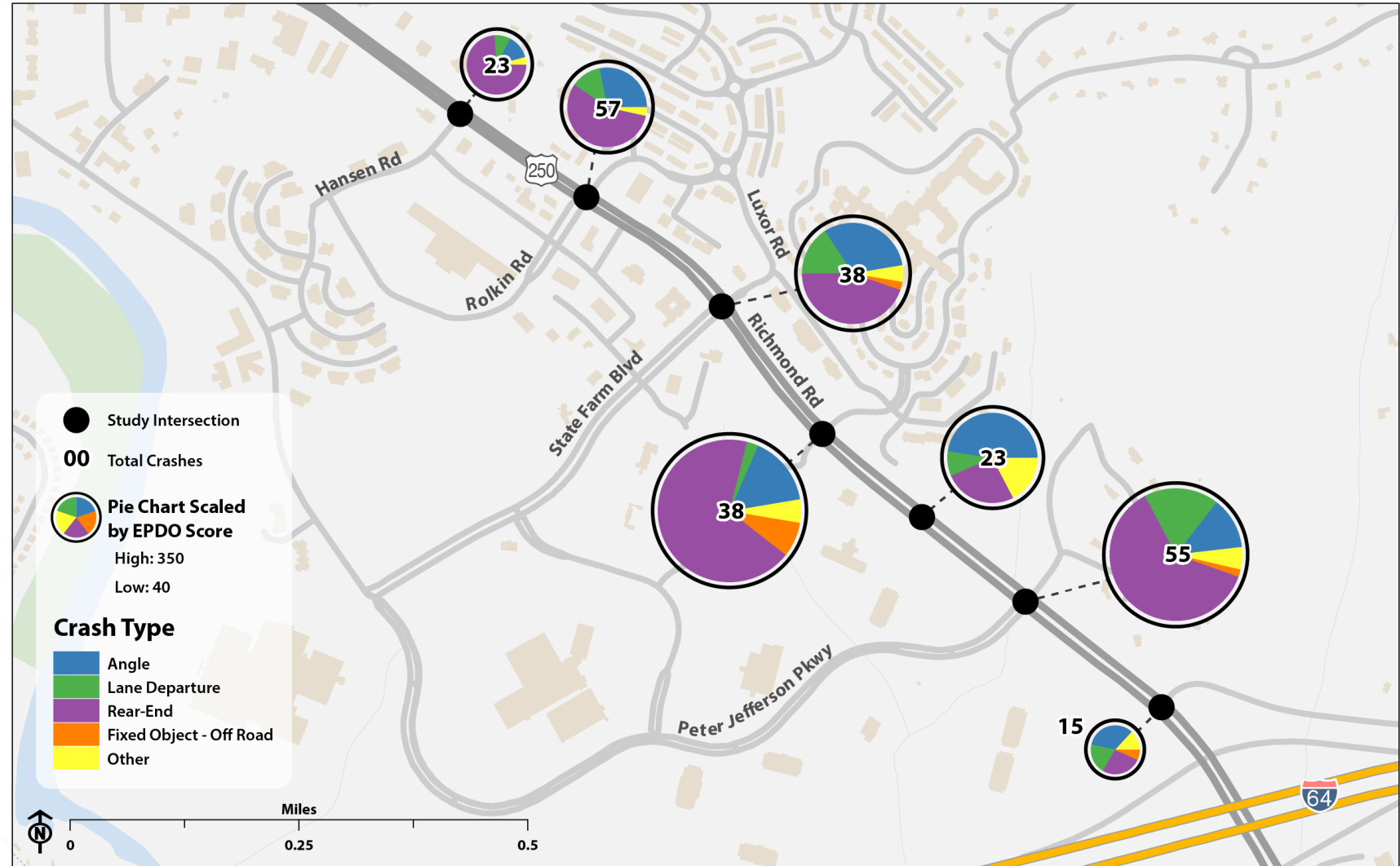


Figure 1: Functional and Physical Areas of an Intersection



## Pedestrian Safety Action Plan (PSAP) 2.0

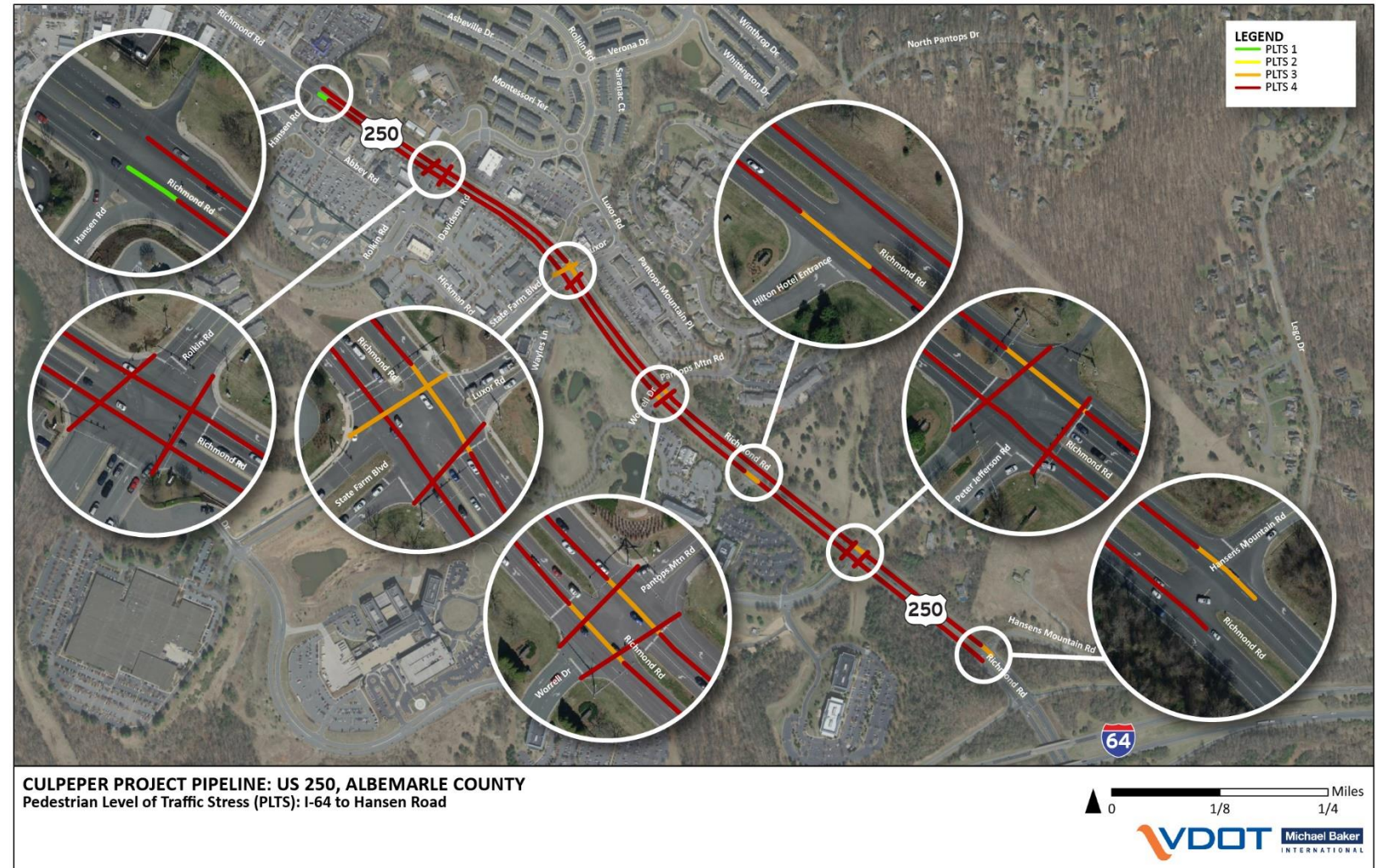
- Priority 2 (Top 1%) corridor
- Ped Fatality near Hansen Rd (2014)
- Ped Injury near Hilton Crossover (2014)

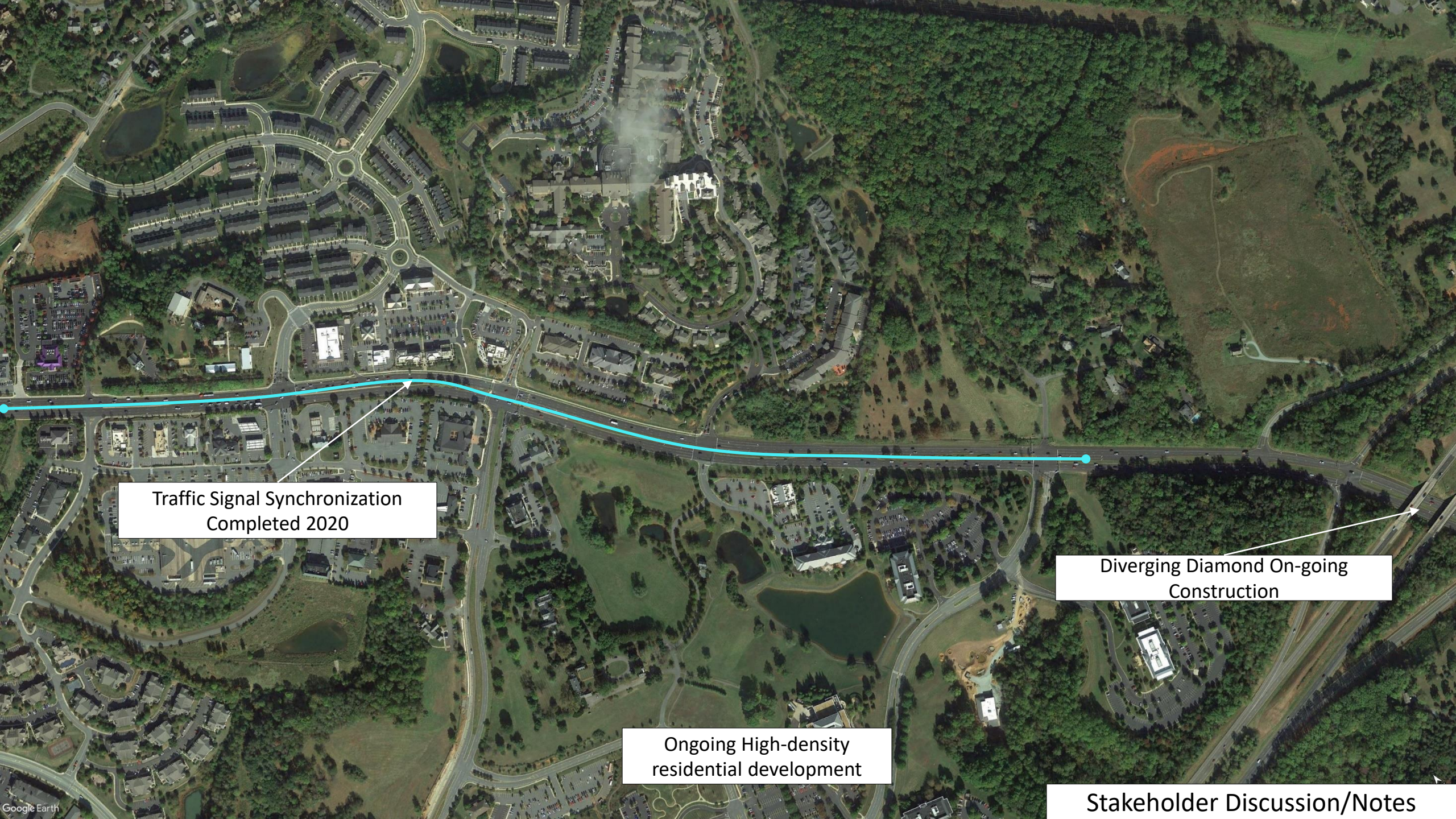
## Identified VTrans Needs

- UDA – Bike/Ped Infrastructure
- UDA – Transit

## Bike/Ped Facilities Overview

- Westbound US 250
  - 50% Sidewalk Coverage
    - 100% with <5' Buffer
- Eastbound US 250
  - 15% Sidewalk Coverage
    - 100% with <5' Buffer
- Intersections
  - 4 Signalized Crossings
  - 100'+ Crossing Distance on US 250
    - Refuges provided at State Farm Blvd
    - Most don't have pedestrian signal equipment





Traffic Signal Synchronization  
Completed 2020

Diverging Diamond On-going  
Construction

Ongoing High-density  
residential development

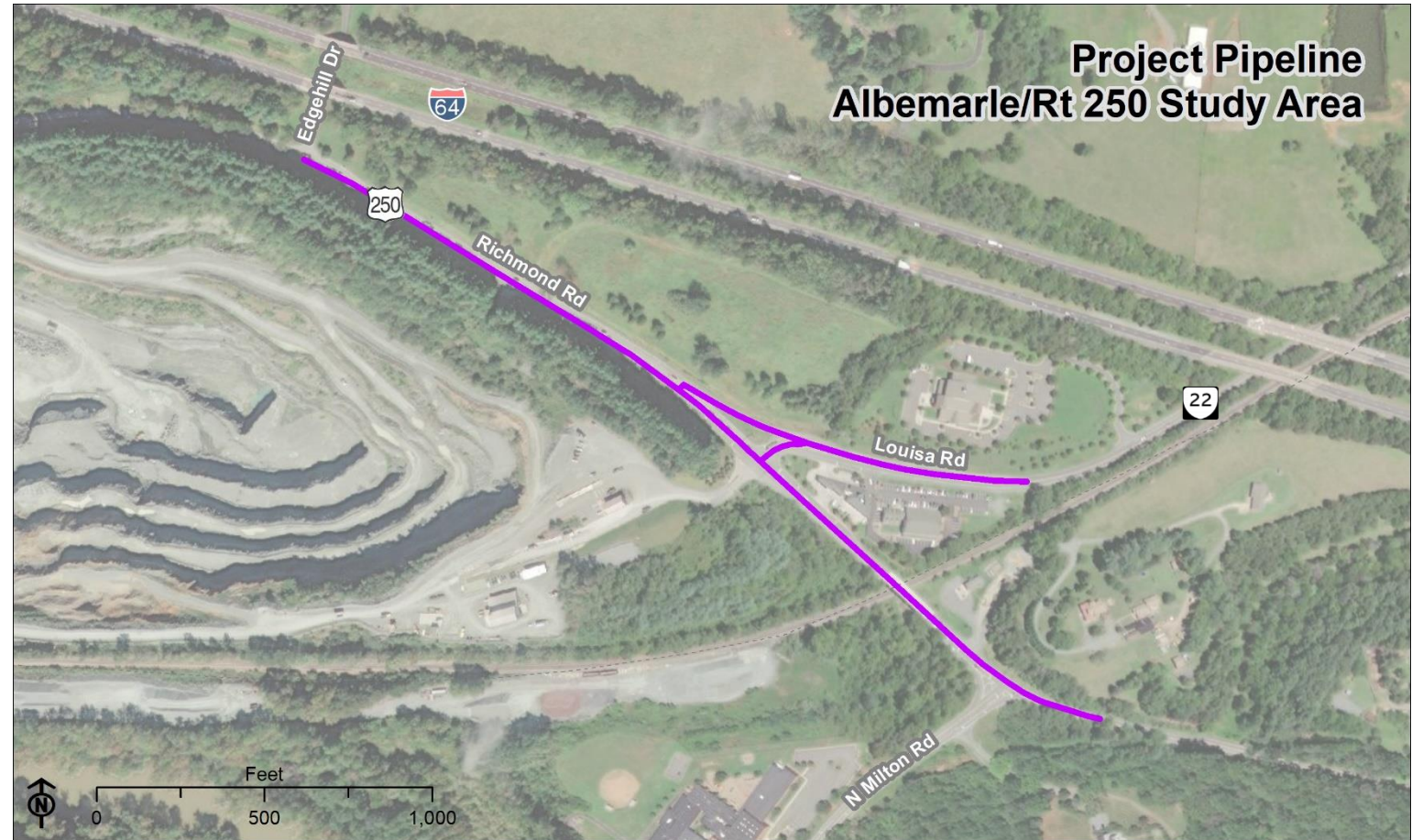
Stakeholder Discussion/Notes

## Overview:

- Corridor congestion and safety performance analysis
- Assess VTrans Mid-Term Needs
- Develop preliminary alternatives based on existing conditions

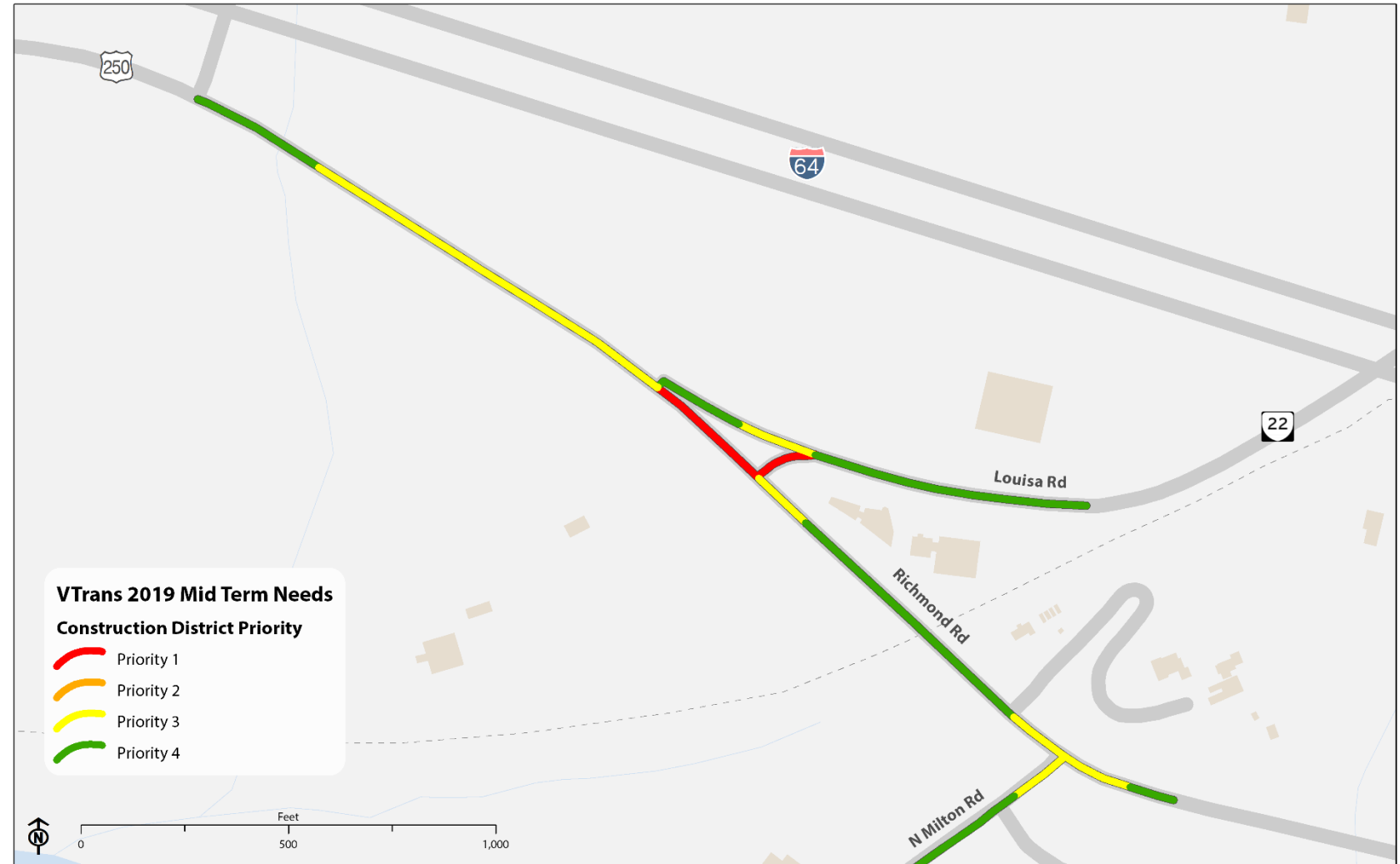
## Study Intersections:

- US 250/Route 22 (Louisa Road)
  - Includes Slip Lane from Route 22 onto US 250 Westbound
- US 250/N Milton Road



- VTrans needs review
- Site Visit
- Crash data analysis
- Bike/Ped accommodations review and assessment
- Literature Review: Studies, Comprehensive Plans, planned projects
- Traffic counts (on-going)

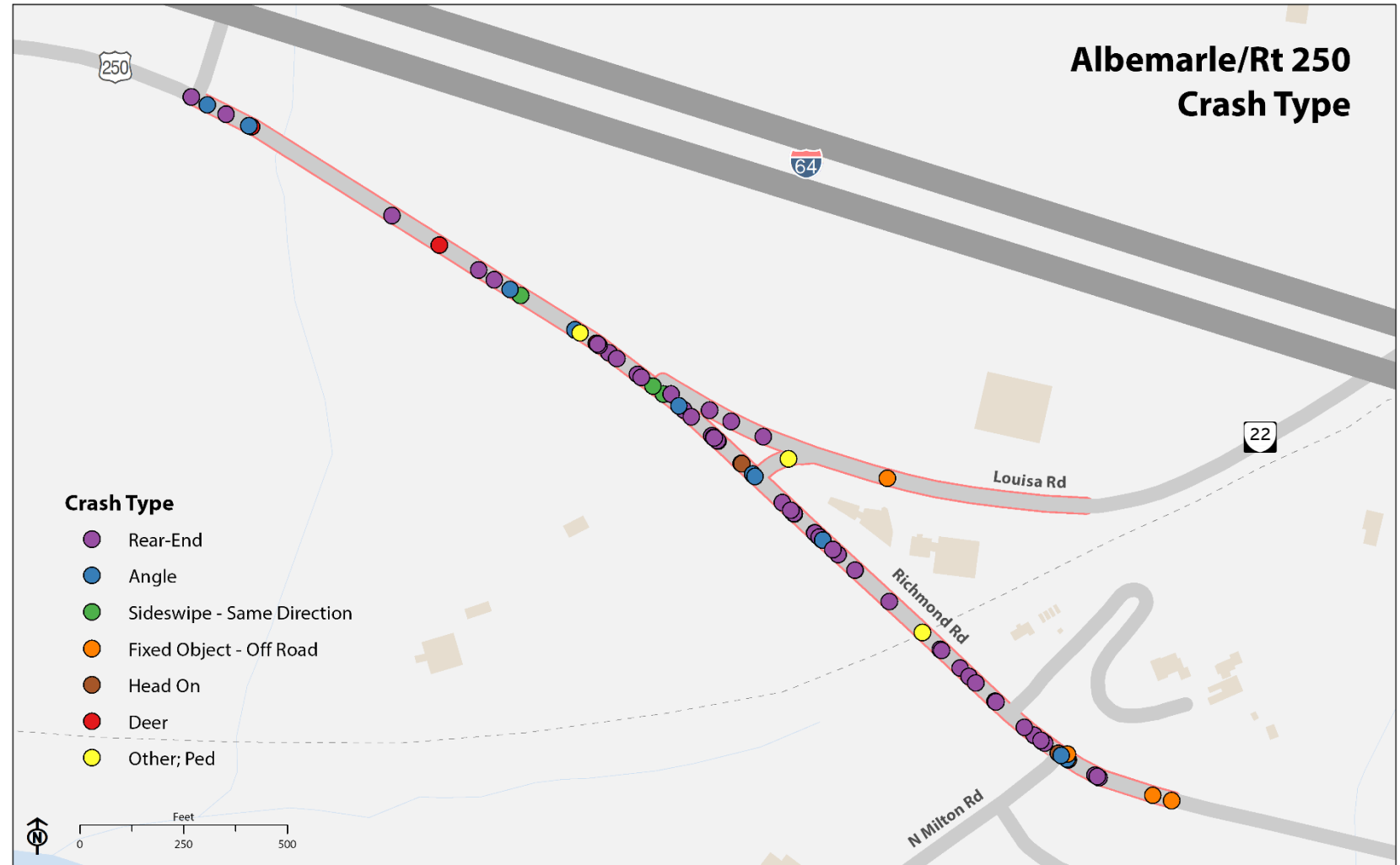
- US 250 and Route 22 a Priority 1 / 2 intersection
- Priority is determined by but not limited to:
  - Volumes, crash data, travel times, land use, reliability, etc.
- Identified Safety Needs at both intersections



# Safety Summary

## Total Crashes and Safety Needs

- Safety need at US 250 and Route 22 (PSI Rank 7)
- Rear-end crashes due to stop-and-go traffic caused from both traffic signals
- Most severe crashes associated with rear-ends traveling eastbound on US 250
  - Majority occur between 3:30 PM and 5:30 PM



# Safety Summary

## Equivalent Property Damage (EPDO) Intersection Totals

Crashes weighted based on crash severity SMART SCALE KABCO Scale

| KABCO | Description              | Weight |
|-------|--------------------------|--------|
| K     | Fatal                    | 85     |
| A     | Suspected Serious Injury | 85     |
| B     | Suspected Minor Injury   | 10     |
| C     | Possible Injury          | 5      |
| O     | Property Damage Only     | 1      |

Crashes grouped based on functional area of intersection

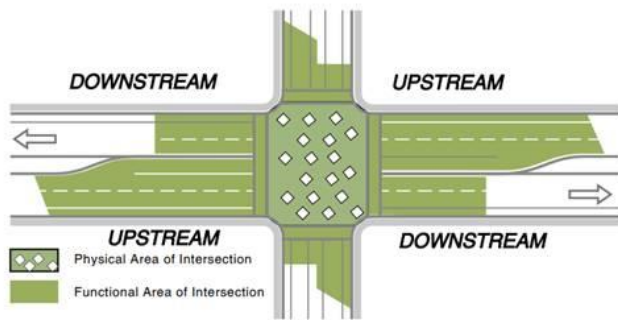
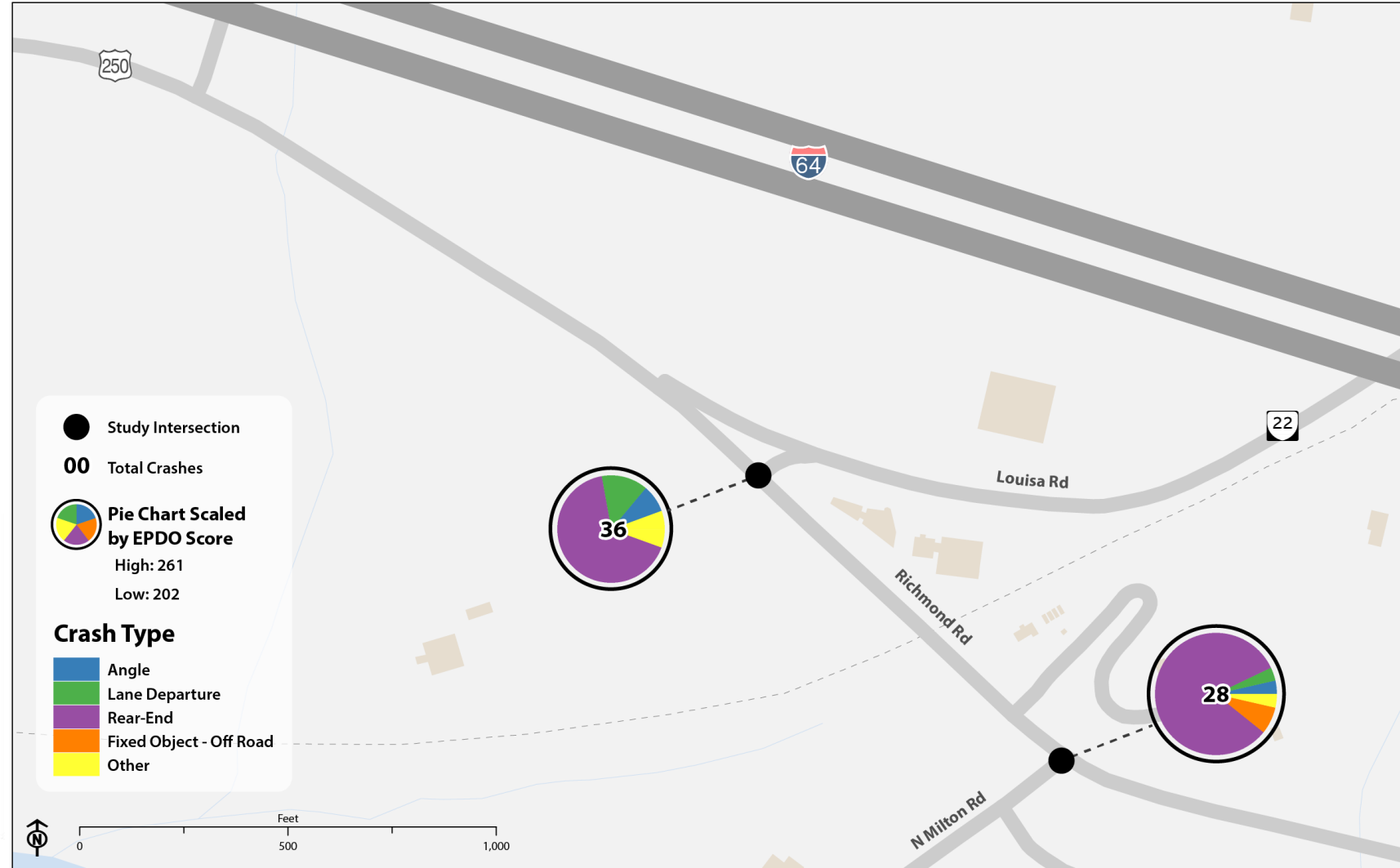
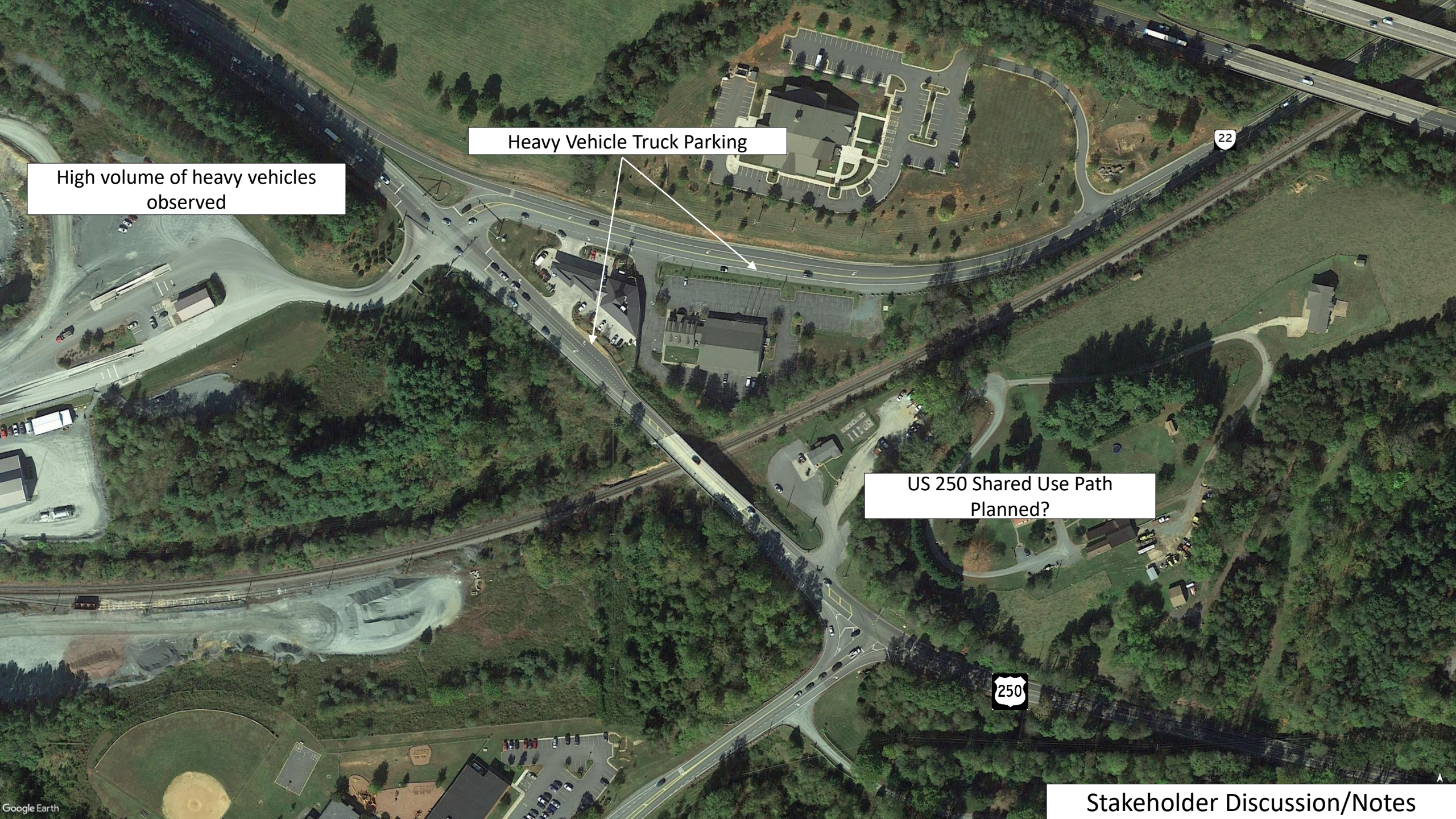


Figure 1: Functional and Physical Areas of an Intersection





High volume of heavy vehicles  
observed

Heavy Vehicle Truck Parking

US 250 Shared Use Path  
Planned?

Stakeholder Discussion/Notes

- Finalize crash analysis
- Process traffic counts
- Perform existing condition analysis
- Develop preliminary alternatives
- September stakeholder meeting

# Albemarle County Culpeper Project Pipeline

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AUGUST 2021

# TECHNICAL MEMO

EXISTING AND FUTURE NO-BUILD CONDITIONS



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# 1.0 INTRODUCTION

US 29 serves as a gateway between Greene and Albemarle Counties and as a National Highway System route facilitating regional, state, and interstate travel. As development changes the character and travel demand along US 29, investments are needed to ensure the continued safe and comfortable travel for all roadway users. The Virginia Department of Transportation (VDOT) is using the public engagement process and analyzing present conditions and future plans to develop a series of feasible transportation options for an approximately six-mile section of Seminole Trail (US 29) as it runs through Greene and Albemarle County.

## The Corridor

The study corridor includes US 29 between Deerfield Drive in Greene County and Airport Road in Albemarle County (**Figure 1**). VDOT classifies US 29 as a principal arterial throughout the state and falls within the National Highway System (NHS). US 29 serves as one of three NHS roadways in the Charlottesville vicinity, running north-south between the Commonwealth's two major north-south interstates: I-81 and I-95. Long-term traffic volumes are projected to grow along US 29 due to planned developments and associated population growth.

## The Study

Through the US 29 corridor study, VDOT will engage Greene County, Albemarle County, and other stakeholders to evaluate automobile, transit, bicycle, and pedestrian travel conditions along the US 29 corridor. The study will assess future travel projections and development patterns and identify

### KEY TERMS>>

- **Principal Arterial:** In urban areas, these roads serve the major activity centers of a metropolitan area and provide continuity for major rural corridors to accommodate trips entering and leaving an urban area.
- **Minor Arterial:** These roads include all arterials not classified as principal arterials, provide more land access than principal arterials, and connect lower speed, lower volume roadways with higher speed, higher volume principal arterials.
- **Major Collector:** Major collectors provide land access and traffic circulation within residential neighborhoods, commercial, and industrial areas. They connect traffic from local roads with the arterial system.
- **National Highway System (NHS):** This is the network of strategic highways within the United States that serves major airports, ports, rail or truck terminals, railway stations, pipeline terminals, or other strategic transport facilities.

transportation solutions to help meet the study's vision and goals.

The study vision for US 29 is to provide safe travel and adequate capacity for all uses and users of the roadway. The study goals include:

1. **Improve safety and comfort**
2. **Manage congestion**
3. **Increase multimodal usability and accessibility**
4. **Support future growth**
5. **Support economic development**

## Study Stakeholders

This study is supported by a stakeholder group made up of representatives from the Albemarle County, Greene County, the Thomas Jefferson Planning District Commission (TJPD), Charlottesville Area Transit (CAT), and Jaunt.

## Public Engagement

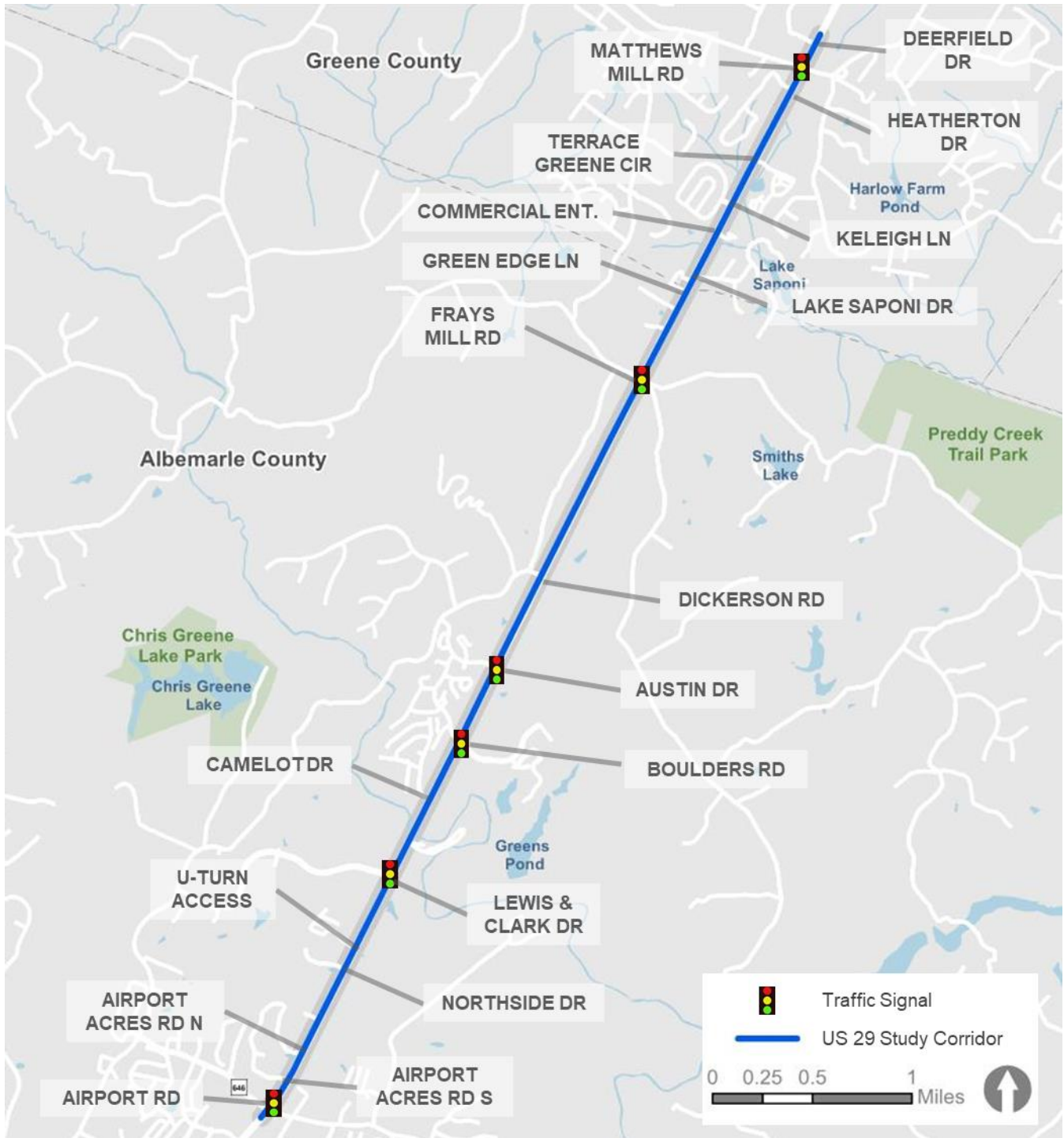
The community is being engaged throughout the project through online surveys, the project website, and a series of public meetings. VDOT and TJPDC has reached out to the following community groups and neighborhood organizations:

- Charlottesville-Albemarle Airport
- Hollymead Town Center
- National Ground Intelligence Center (NGIC)
- University of Virginia (UVA) Research Park

## This Memorandum

This document discusses existing and future 2045 no-build conditions along the full length of the corridor through a variety of sources, including land use data, transportation data, transit ridership information, and crash history. The data are complemented by input received from stakeholders, key community groups, and members of the public through meetings and surveys. The information from the data analysis and stakeholder input will inform the measures that will be used to evaluate alternative solutions later in the study process.

Figure 1 US 29 Study Corridor Map



Source: Kittelson 2021

## 2.0 LAND USE CONTEXT

This section summarizes the approach and findings of the land use context analysis. The material below discusses existing land use patterns and future land use trends along the study corridor.

### 2.1 Existing Land Use

The US 29 corridor is a diverse area that serves as the gateway between Greene and Albemarle Counties and the surrounding region. US 29 serves an important role as an east-coast US highway, connecting regional residents, commuters, and travelers alike to statewide destinations like Northern Virginia, Charlottesville, and Danville, and out-of-state destinations like Maryland or Florida. Major activity centers along the corridor include University of Virginia Research Park, Charlottesville-Albemarle Airport, Hollymead Town Center, and National Ground Intelligence Center. Important activity centers near the study area include Greene Lake State Park and Preddy Creek Trail Park.

**Figure 2** summarizes existing land uses along the corridor.

#### Existing Land Use Data

2019 parcel-level zoning data were obtained from Albemarle County and Greene County. These data include each parcel's land use code.

#### Existing Land Use

The land use mixes along US 29 contributes greatly to the corridor's character. Traveling along US 29 from the study corridor's northern terminus

at Deerfield Drive to its southern terminus at Airport Road, it is possible to observe a range of land use contexts. Rural landscape, residential neighborhoods, industrial parks, and numerous planned developments to come can be found along the length of the corridor.

The US 29 corridor comprises a mix of land uses, with much of the larger surrounding area dedicated to rural land uses. North of the Albemarle-Greene County line, land is primarily zoned residential and highway commercial. South of the county line in Albemarle County, land is mainly rural until Austin Drive. Residential zoning is concentrated on the west side of US 29 from Austin Drive to the Rivanna River, while a mix of industrial, commercial, and planned residential zoning exists on the east side. Much of the area south of the Rivanna River is reversed from its zoning to the north, with industrial and planned industrial zoning on the west side of US 29. Planned mixed-use zoning is located south of the Rivanna River on the east side of US 29.

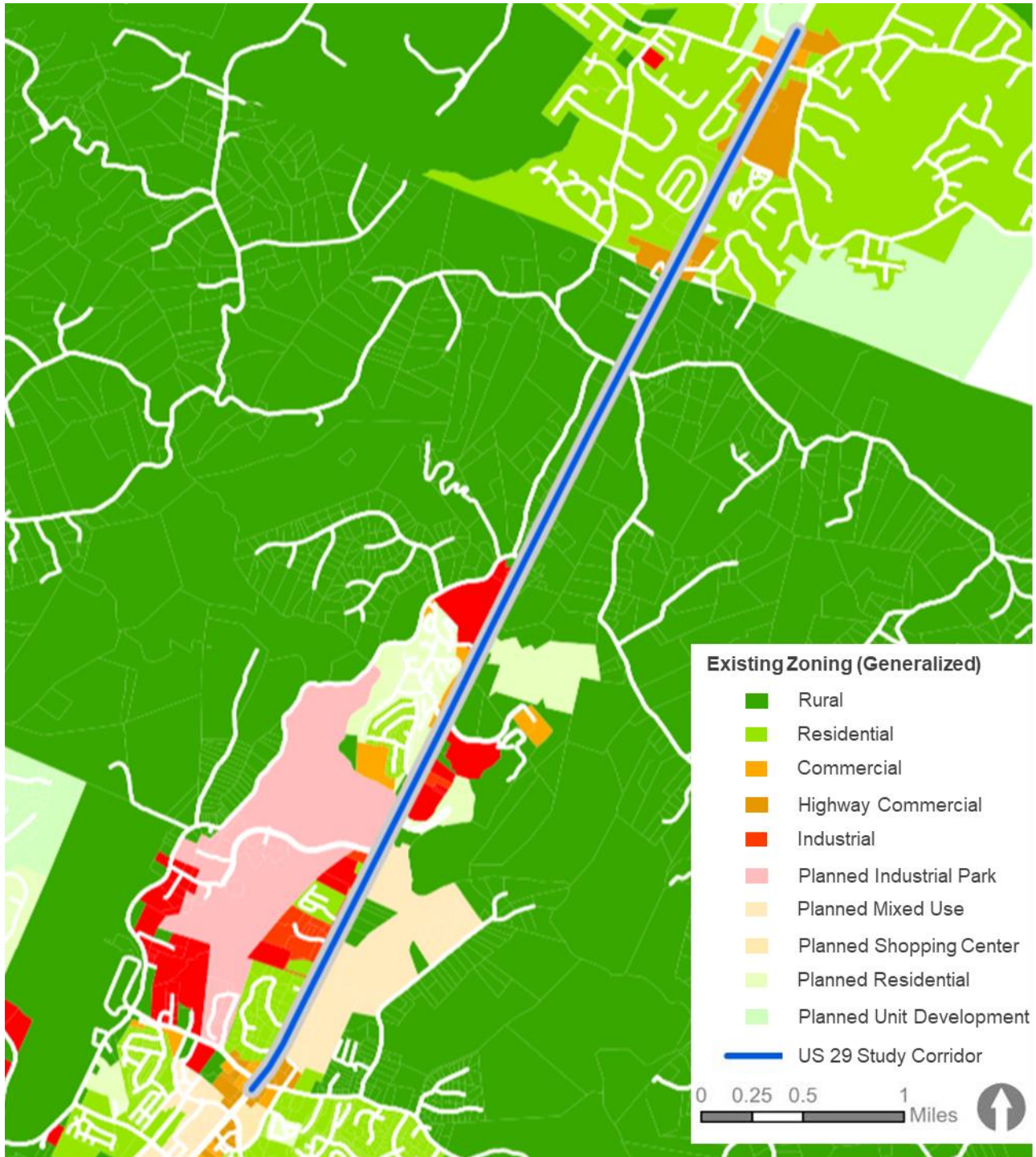
Two informal boundaries exist along the corridor – one being the Albemarle-Greene County line, separating rural uses to the south from residential and commercial to the north – and the other being the Rivanna River, separating rural uses to the north from the denser development to the south.

#### Activity Generators

**Figure 3** shows various activity generators along US 29. These include:

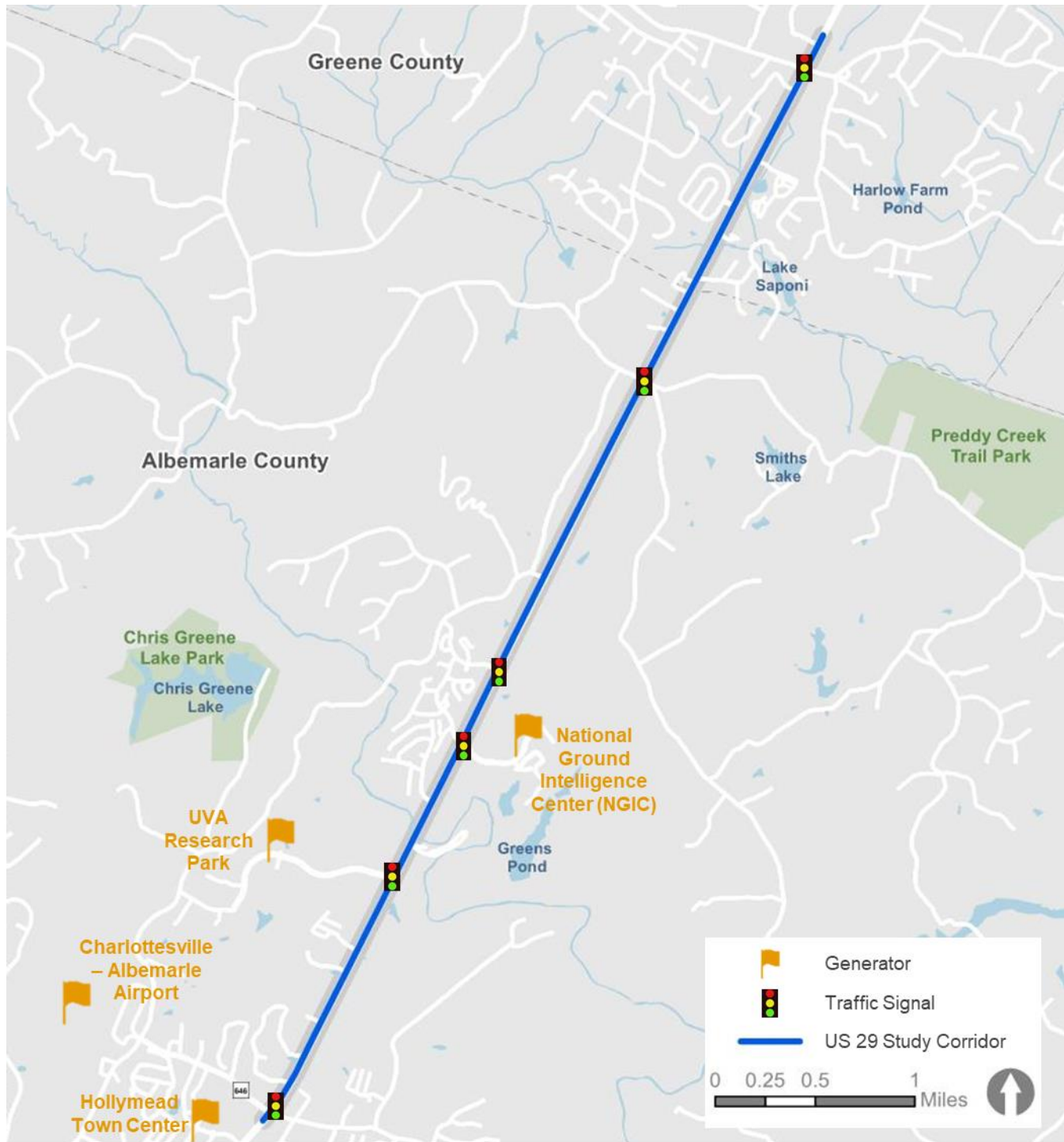
- Schools: University of Virginia (UVA) Research Park
- Transportation: Charlottesville-Albemarle Airport
- Shopping destinations: Hollymead Town Center (south of study area)
- Government institutions: National Ground Intelligence Center (NGIC)

Figure 2 Existing Land Use



Source: Albemarle County, Greene County, Kittelson 2021

Figure 3 Activity Generators



Source: Kittelson 2021

## 2.2 Future Land Use

As a significant highway for regional, statewide, and national travel, the number of roadway improvement and development projects along US 29 have been trending upward. **Figure 4** identifies the different planned developments bringing diverse land uses to the corridor.

### Future Land Use Data

Future land use data were obtained from members of the study stakeholder group, including Albemarle and Greene Counties. These data included planned future developments located within the study corridor.

### Future Land Use

**Figure 4** shows the current planned developments for each of the municipalities along the corridor. Within the corridor, six residential-based, mixed-use developments are slated for construction or actively participating in Albemarle and Greene County's development approval processes in the vicinity of US 29. These developments include:

- Village at Terrace Greene
- Cedar Run Townhomes
- Seminole Casa
- Creekside & The Village at Preddy Creek
- Judo Townhomes
- North Pointe

#### ***Village at Terrace Greene (Greene)***

The Village at Terrace Greene development is actively participating in Greene County's development approval process, so the land use mix proposed by the development is in flux. The proposed development site connects Route 670 to US 29 and sits on the east side of the corridor with

site access from Terrace Greene Circle, Route 670, Heatherton Drive, and a new site access driveway north of Terrace Greene Circle. The latest known proposal for the Village at Terrace Greene site includes:

- 282 townhomes, a movie theater, a day care, industrial space, and several retail uses.

#### ***Cedar Run Townhomes (Greene)***

The Cedar Run Townhomes development is actively participating in Greene County's development approval process. The proposed development site includes a site access to US 29 north of Keleigh Lane and sits west of the corridor. The latest known proposal for the Village at Terrace Greene site includes:

- 55 townhomes.

#### ***Seminole Casa (Greene)***

The Seminole Casa development is actively participating in Greene County's development approval process. The proposed development site sits west of US 29 between Keleigh Lane and Lake Saponi Drive. The latest known proposal for Seminole Casa includes:

- 120 apartments.

#### ***Judo Townhomes (Greene)***

The Judo Townhomes development is actively participating in Greene County's development approval process and is under review. The proposed development site sits east of US 29 off Judo Drive. The latest known proposal for the Judo Townhomes site includes:

- 165 townhomes.

### ***Creekside & The Village at Preddy Creek (Greene)***

Creekside & The Village at Preddy Creek development is actively participating in Greene County's development approval process. The proposed development sits east of US 29 with site access off Route 670 near Preddy Creek Trail Park. The latest known proposal for Creekside & The Village at Preddy Creek site includes:

- 580 townhomes and 600 single family homes.

### ***North Pointe (Albemarle)***

The North Pointe development is broken into multiple phases and is actively participating in Albemarle County's development approval process, so the land use mix proposed by the development is in flux. The proposed development site sits east of US 29 includes 2 site accesses to the corridor – one across from Northside Drive and one across from Lewis and Clark Drive. The latest known proposal for the Village at Terrace Greene site includes:

- 205 single family homes in Phase I,
- An addition of 300 apartment units in the full build.

to be constructed by 2025. The proposed Route 670 Connector Road includes:

- Constructing a new median break as a directional crossover
- Constructing a northbound right-turn lane on US 29 with 450 feet of storage
- Constructing a southbound left-turn lane on US 29 with 450 feet of storage.

### ***Lewis & Clark Drive RCUT***

An RCUT is proposed at the intersection of US 29/Lewis & Clark Drive with a new site access proposed for the North Pointe development opposite to Lewis & Clark Drive. The intersection is proposed to be reconfigured as a signalized RCUT by North Pointe's full-build analysis year of 2026.

## **Future Roadway Projects**

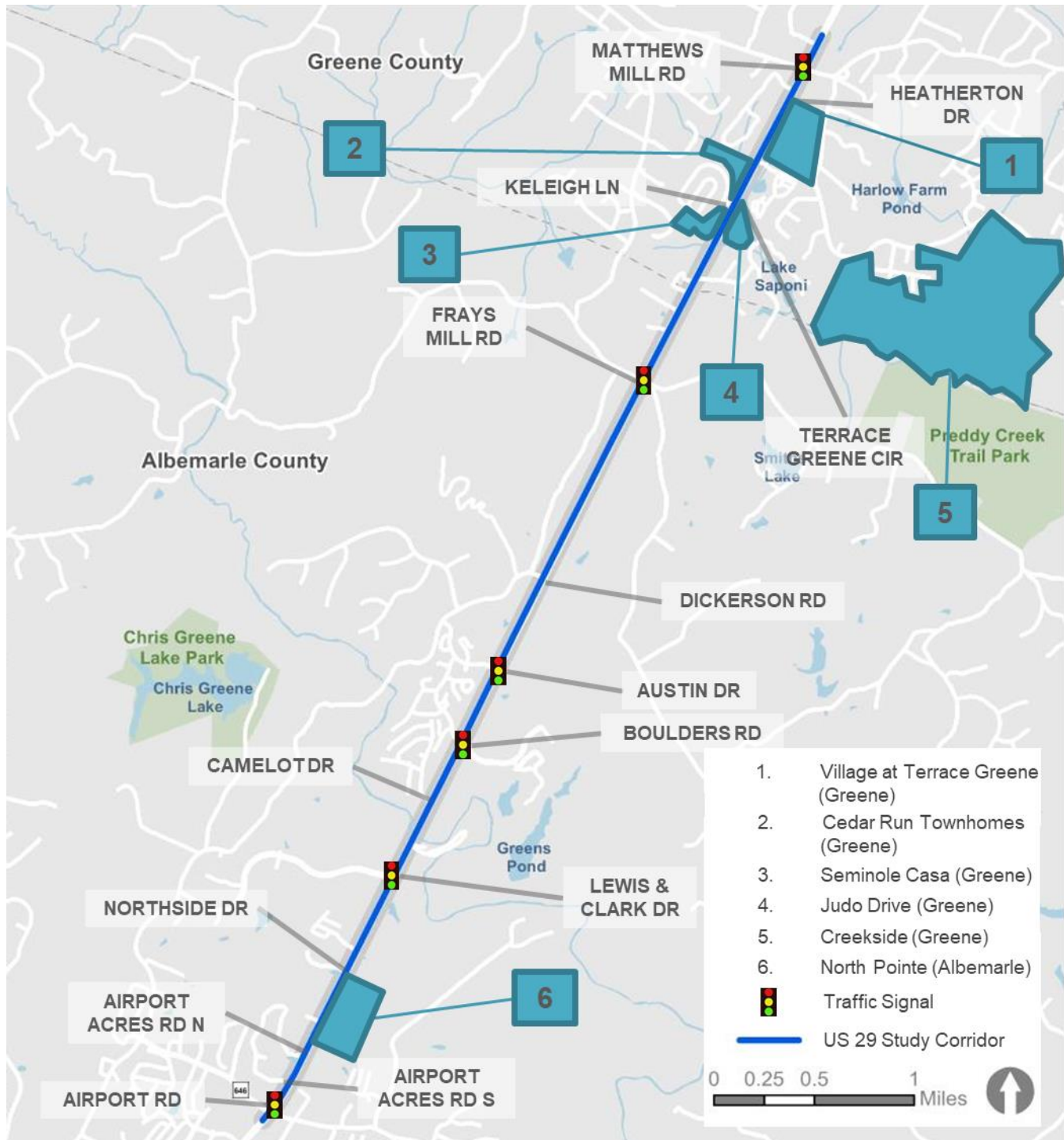
**Figure 5** shows the current planned roadway projects along the corridor that are approved and funded. These projects include:

- Route 670 Connector
- Lewis & Clark Drive Restricted Crossing U-Turn (RCUT)

### ***Route 670 Connector***

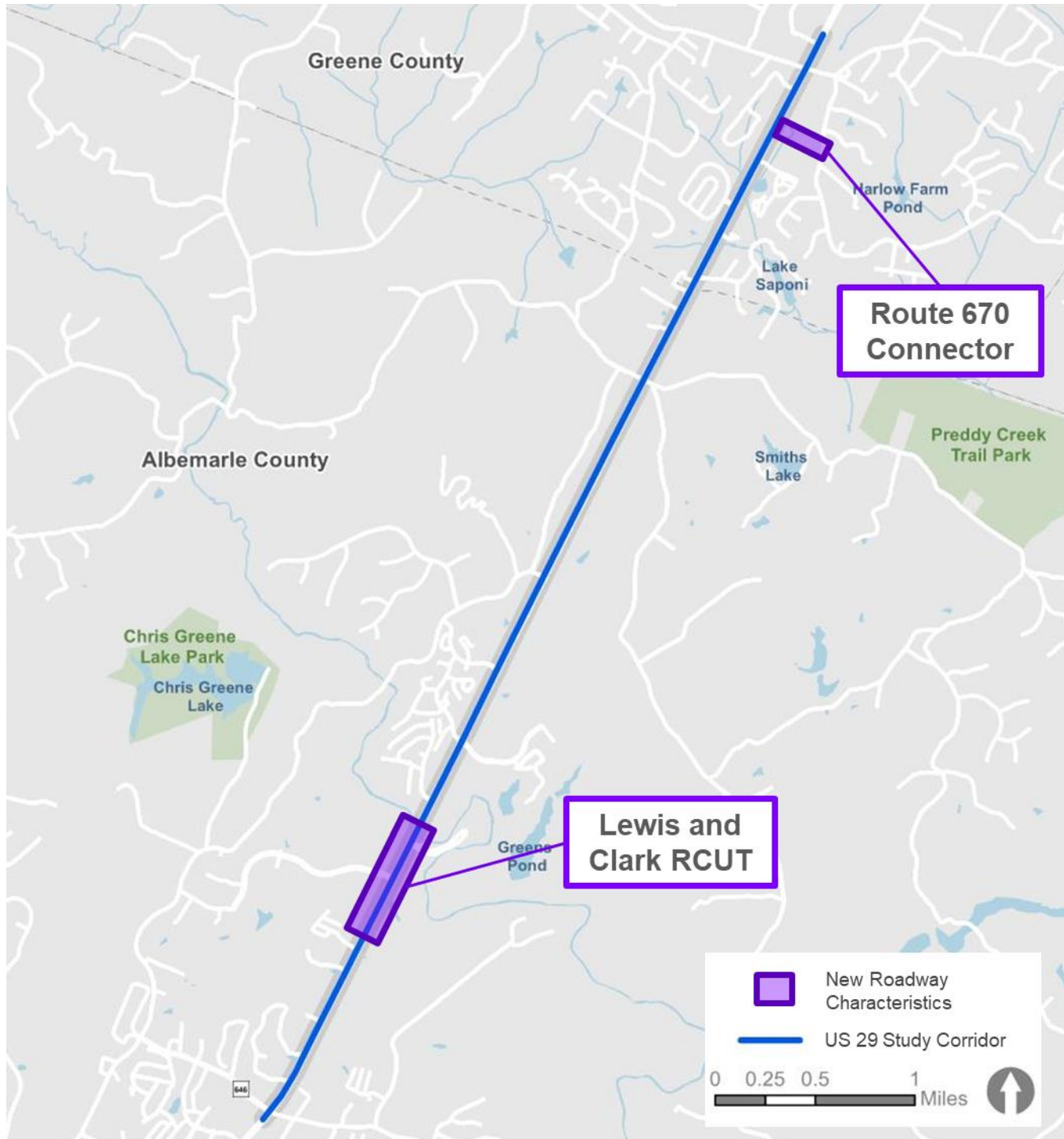
The Route 670 Connector will be a two-lane road connecting Route 670 to US 29 which is expected

Figure 4 Planned Developments on US 29



Source: Albemarle County, Greene County, Kittelson 2021.

**Figure 5 Planned Roadway Developments on US 29**



Source: Kittelson 2021.

## 3.0 INTERSECTION OPERATIONS

This section summarizes the approach and findings for traffic operations analysis under existing and future year 2045 no-build conditions. **Table 1** displays the major transportation facilities for this study.

**Table 1 Major Roadway Facilities**

| Roadway                                   | US 29                              |                               |                          |
|-------------------------------------------|------------------------------------|-------------------------------|--------------------------|
|                                           | Deerfield Dr to Albemarle Co. Line | Greene Co. Line to Camelot Dr | Camelot Dr to Airport Rd |
| Classification <sup>1</sup>               | Principal Arterial                 | Principal Arterial            | Principal Collector      |
| Number of Lanes                           | 4                                  | 4                             | 4                        |
| Speed Limit (mph)                         | 55                                 | 55                            | 45-55 <sup>2</sup>       |
| Average Annual Daily Traffic <sup>3</sup> | 24,000                             | 27,000                        | 32,000                   |
| Median                                    | Yes                                | Yes                           | Yes                      |
| Sidewalks                                 | No                                 | No                            | No                       |
| Bicycle Lanes                             | No                                 | No                            | No                       |
| On-Street Parking                         | No                                 | No                            | No                       |

<sup>1</sup> Classifications based on VDOT's 2014 Functional Classification Map.

<sup>2</sup> US 29 is only 45 mph between Airport Acres Road (S) and Airport Road.

<sup>3</sup> Average Annual Daily Traffic (AADT) based on VDOT's Virginia Roads Traffic Volume Map

### 3.1 Existing Conditions

A mixture of previous studies and data collection was used to produce traffic counts. While most traffic counts were collected in April 2021, six intersections had 2017 and 2020 volumes pulled from previous studies Village at Terrace Greene TIA and US 29 & Route 641 Study, respectively. Weekday a.m. and p.m. data were gathered for 19 study intersections along the street:

#### KEY TERMS>>

- **Operations Analysis:** An evaluation of how a roadway or set of roadways function under existing and/or anticipated traffic and geometric conditions.
- **Peak Hour:** The time of day when demand for a transportation facility is highest and the ease with which vehicles can move through the transportation facility is most limited. Weekdays typically have two peak hours (AM and PM), while weekends have a single peak hour.

- Deerfield Drive
- Matthew Mill Road (signalized)
- Heatherton Drive
- Terrace Greene Circle
- Keleigh Lane
- Commercial Entrance
- Lake Saponi Drive
- Green Edge Lane
- Frays Mill Road (signalized)
- Dickerson Road
- Austin Drive (signalized)
- Boulders Road (signalized)
- Camelot Drive
- Lewis & Clark Drive (signalized)
- U-Turn Access north of Cypress Drive
- Northside Drive
- Airport Acres Road N
- Airport Acres Road S
- Airport Road (signalized)

**Figure 6** shows the traffic count locations.

Intersection-specific peak hours were used for the analysis given the distances between intersection and the mix of land uses/contexts throughout the corridor. AM peak hours were observed to occur between 7:15 a.m. and 8:45 a.m. PM peak hours

were observed to occur between 4:00 p.m. and 6:00 p.m.

Traffic operations analyses were performed at study corridor intersections in accordance with the *Highway Capacity Manual (HCM)* using SYNCHRO 10. Due to non-National Electrical Manufacturers Association (NEMA) phasing limitations, HCM 2000 was used. **Table 2** and **Figure 7** as well as **Table 3** and **Figure 8** summarize the operational analysis for the study intersections under the weekday a.m. and p.m. peak hour existing traffic conditions, respectively. The traffic counts can be found in **Attachment A**. The full analysis can be found in **Attachment B**.

Most of the study intersections perform acceptably during each of the peak hours studied. Exceptions are described below:

## AM Existing Conditions

- Most LOS E and F movements are due to delay and are not near capacity.
- Heavy southbound through traffic
- Two intersections over capacity as measured by volume-to-capacity (v/c) ratio:
  - US 29/Frays Mill Rd over capacity:  $v/c = 1.32$
  - US 29/Airport Rd over capacity:  $v/c = 1.02$

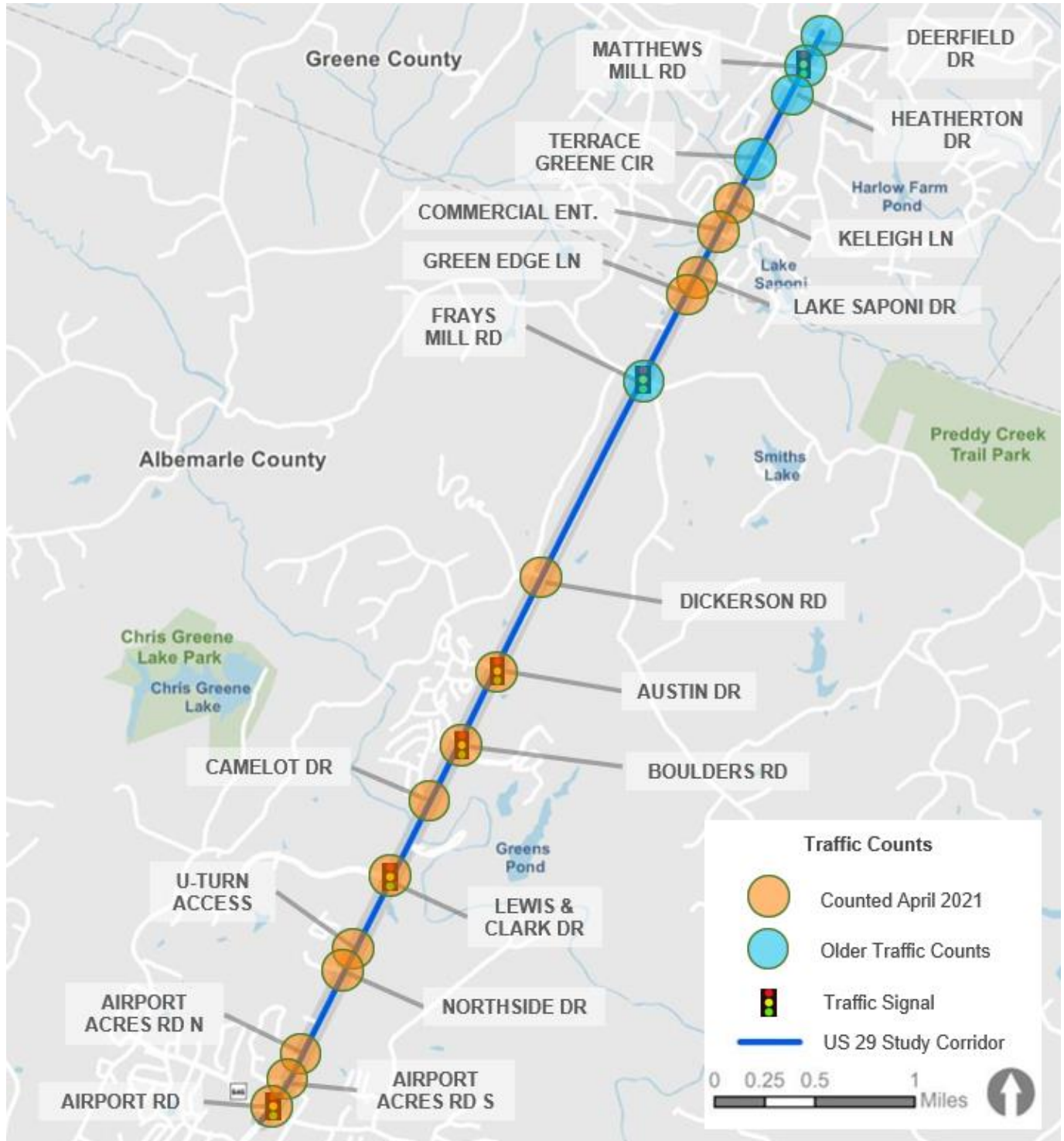
## PM Existing Conditions

- Most LOS E and F movements are due to delay and are not near capacity.
- One intersection over capacity:
  - US 29/Airport Rd over capacity:  $v/c = 1.05$

### KEY TERMS>>

- **Delay:** The amount of time it takes vehicles to pass through an intersection (reported in seconds)
- **Level of Service (LOS):** A performance metric communicating quality of intersection service. For vehicles, LOS D indicates acceptable quality in urban conditions, while LOS scores of E-F indicate poor quality.
- **Volume-to-capacity (v/c) ratio:** A ratio comparing the number of vehicles traveling through an intersection at a given point in time to the maximum capacity of the intersection. A v/c score of 1 or higher means that an intersection is at or above capacity. A v/c score below 1 means that an intersection is below capacity.
- **95<sup>th</sup> percentile queue length:** The worst-case queue length (number of vehicles waiting in a lane) during a given time period. These queues have only a 5 percent probability of being exceeded.

Figure 6 US 29 Traffic Count Locations



Older traffic counts include: 2018 US 29/Route 641 Corridor Study and 2017 Terrace Greene TIA.  
Source: Kittelson 2021

**Table 2 Existing AM Conditions Operational Analysis**

| Intersection                | Peak hour | Intersection delay (sec) and level of service <sup>1</sup> | Worst-performing movement     | Delay (sec) and level of service <sup>2</sup> | v/c <sup>2</sup> | 95 <sup>th</sup> percentile queues (feet) <sup>3</sup> |
|-----------------------------|-----------|------------------------------------------------------------|-------------------------------|-----------------------------------------------|------------------|--------------------------------------------------------|
| US 29/Deerfield Drive       | AM Peak   |                                                            | Deerfield Drive (EB)          | 21.6 (C)                                      | 0.43             | 8                                                      |
| US 29/Matthew Mill Road     | AM Peak   | 49.2 (D)                                                   | US 29 (SB)                    | 58.5 (E)                                      | 0.90             | #744                                                   |
| US 29/Heatherton Drive      | AM Peak   |                                                            | Heatherton Drive (EB)         | 17.9 (C)                                      | 0.56             | 17                                                     |
| US 29/Terrace Greene Circle | AM Peak   |                                                            | Terrace Greene Circle (EB)    | 17.9 (C)                                      | 0.53             | 11                                                     |
| US 29/Keleigh Lane          | AM Peak   |                                                            | Keleigh Lane (EB)             | 35.1 (E)                                      | 0.58             | 29                                                     |
| US 29/Commercial Entrance   | AM Peak   |                                                            | Commercial Entrance (WB)      | 33.4 (D)                                      | 0.57             | 39                                                     |
| US 29/Lake Saponi Drive     | AM Peak   |                                                            | Lake Saponi Drive (WB)        | 10.6 (B)                                      | 0.60             | 5                                                      |
| US 29/Greene Edge Lane      | AM Peak   |                                                            | Greene Edge Lane (EB)         | 20.8 (C)                                      | 0.82             | 0                                                      |
| US 29/Frays Mill Road       | AM Peak   | 128.4 (F)                                                  | Frays Mill Road (WB)          | 1126.4 (F)                                    | 1.32             | #1174                                                  |
| US 29/Dickerson Road        | AM Peak   |                                                            | Dickerson Road (EB)           | 64.3 (F)                                      | 0.65             | 28                                                     |
| US 29/Austin Drive          | AM Peak   | 12.1 (B)                                                   | Austin Drive (EB)             | 51.0 (D)                                      | 0.86             | #925                                                   |
| US 29/Boulders Road         | AM Peak   | 29.2 (C)                                                   | Boulders Road (WB)            | 51.5 (D)                                      | 0.83             | #1009                                                  |
| US 29/Camelot Drive         | AM Peak   |                                                            | Camelot Drive (EB)            | 50.5 (F)                                      | 0.66             | 41                                                     |
| US 29/Lewis & Clark Drive   | AM Peak   | 11.3 (B)                                                   | Lewis & Clark Drive (EB)      | 52.0 (D)                                      | 0.77             | #815                                                   |
| US 29/U-Turn Access         | AM Peak   |                                                            | U-Turn Access (WB)            | 23.1 (C)                                      | 0.63             | 6                                                      |
| US 29/Northside Drive       | AM Peak   |                                                            | Northside Drive (WB)          | 99.7 (F)                                      | 0.65             | 7                                                      |
| US 29/Airport Acres Road N  | AM Peak   |                                                            | Airport Acres Road North (WB) | 96.7 (F)                                      | 0.89             | 2                                                      |
| US 29/Airport Acres Road S  | AM Peak   |                                                            | Airport Acres Road South (EB) | 26.9 (E)                                      | 0.88             | 5                                                      |
| US 29/Airport Road          | AM Peak   | 46.4 (D)                                                   | Airport Road (WB)             | 164.8 (F)                                     | 1.02             | #826                                                   |

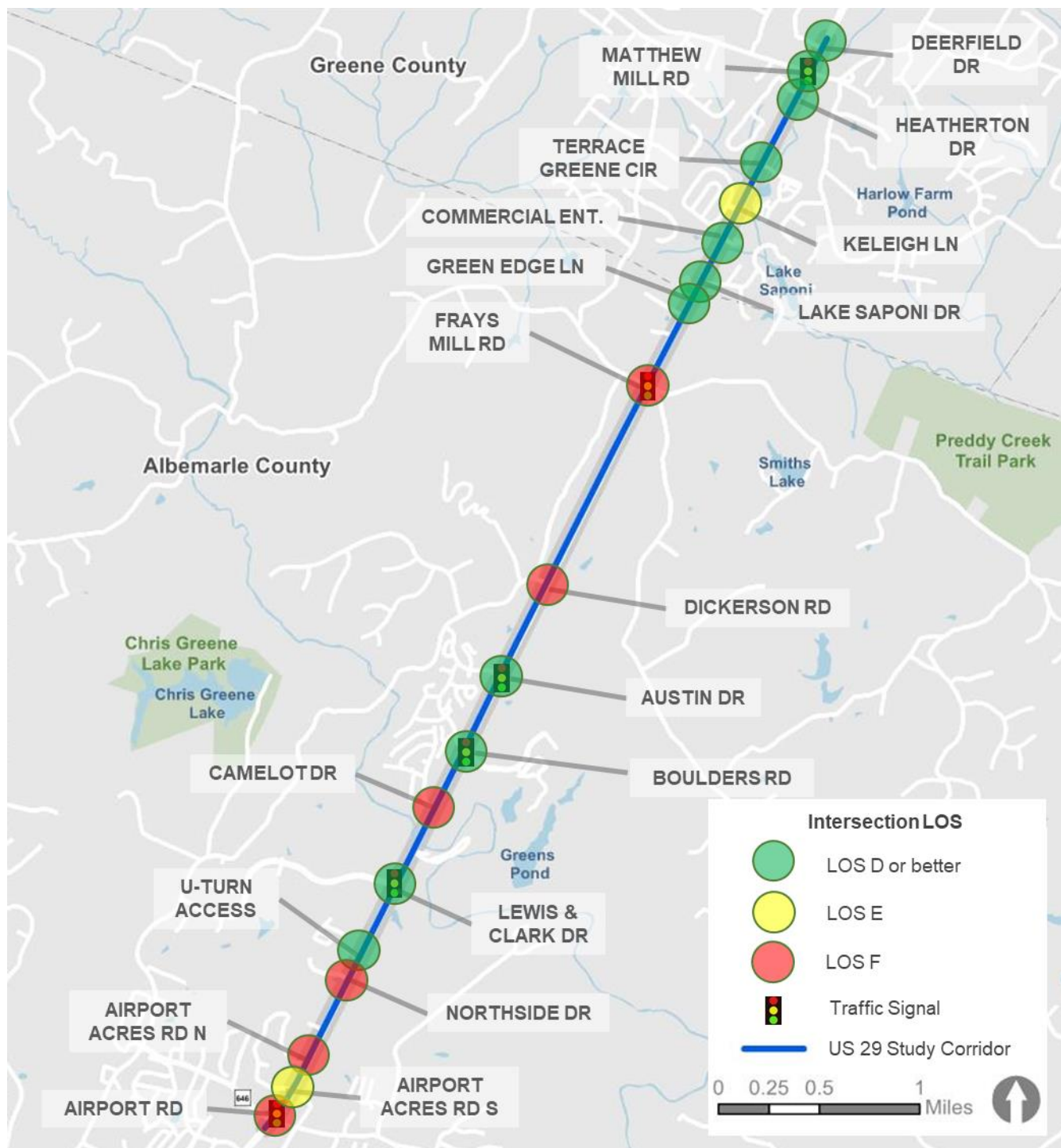
<sup>1</sup> Average intersection delay, LOS reported only for signalized intersections<sup>2</sup> Reported delay, level of service, v/c, and 95<sup>th</sup> percentile queues represent the worst-performing metric at each intersection<sup>3</sup> 95<sup>th</sup> percentile queues rounded up to the nearest whole number

**Table 3 Existing PM Conditions Operational Analysis**

| Intersection                | Peak hour | Intersection delay (sec) and level of service <sup>1</sup> | Worst-performing movement     | Delay (sec) and level of service <sup>2</sup> | v/c <sup>2</sup> | 95 <sup>th</sup> percentile queues (feet) <sup>3</sup> |
|-----------------------------|-----------|------------------------------------------------------------|-------------------------------|-----------------------------------------------|------------------|--------------------------------------------------------|
| US 29/Deerfield Drive       | PM Peak   |                                                            | Deerfield Drive (EB)          | 18.9 (C)                                      | 0.44             | 18                                                     |
| US 29/Matthew Mill Road     | PM Peak   | 37.5 (D)                                                   | Matthew Mill Road (EB)        | 59.6 (E)                                      | 0.81             | #249                                                   |
| US 29/Heatherton Drive      | PM Peak   |                                                            | Heatherton Drive (EB)         | 14.1 (B)                                      | 0.56             | 6                                                      |
| US 29/Terrace Greene Circle | PM Peak   |                                                            | Terrace Greene Circle (WB)    | 25.3 (D)                                      | 0.59             | 25                                                     |
| US 29/Keleigh Lane          | PM Peak   |                                                            | Keleigh Lane (EB)             | 18.1 (C)                                      | 0.61             | 6                                                      |
| US 29/Commercial Entrance   | PM Peak   |                                                            | Commercial Entrance (WB)      | 25.8 (D)                                      | 0.59             | 23                                                     |
| US 29/Lake Saponi Drive     | PM Peak   |                                                            | Lake Saponi Drive (WB)        | 23.6 (C)                                      | 0.59             | 14                                                     |
| US 29/Greene Edge Lane      | PM Peak   |                                                            | Greene Edge Lane (EB)         | 0.0 (A)                                       | 0.80             | 0                                                      |
| US 29/Frays Mill Road       | PM Peak   | 31.5 (C)                                                   | Frays Mill Road (WB)          | 78.9 (E)                                      | 0.87             | #1021                                                  |
| US 29/Dickerson Road        | PM Peak   |                                                            | Dickerson Road (EB)           | 28.9 (D)                                      | 0.87             | 17                                                     |
| US 29/Austin Drive          | PM Peak   | 7.0 (A)                                                    | Austin Drive (EB)             | 56.3 (E)                                      | 0.84             | 435                                                    |
| US 29/Boulders Road         | PM Peak   | 26.8 (C)                                                   | Boulders Road (WB)            | 64.8 (E)                                      | 0.86             | #1029                                                  |
| US 29/Camelot Drive         | PM Peak   |                                                            | Camelot Drive (WB)            | 139.1 (F)                                     | 0.68             | 49                                                     |
| US 29/Lewis & Clark Drive   | PM Peak   | 13.0 (B)                                                   | Lewis & Clark Drive (EB)      | 54.3 (D)                                      | 0.82             | 627                                                    |
| US 29/U-Turn Access         | PM Peak   |                                                            | U-Turn Access (WB)            | 15.1 (C)                                      | 0.41             | 4                                                      |
| US 29/Northside Drive       | PM Peak   |                                                            | Northside Drive (WB)          | 30.0 (D)                                      | 0.40             | 8                                                      |
| US 29/Airport Acres Road N  | PM Peak   |                                                            | Airport Acres Road North (WB) | 32.2 (D)                                      | 0.55             | 4                                                      |
| US 29/Airport Acres Road S  | PM Peak   |                                                            | Airport Acres Road South (EB) | 15.7 (C)                                      | 0.63             | 3                                                      |
| US 29/Airport Road          | PM Peak   | 65.2 (E)                                                   | US 29 (NB)                    | 88.7 (F)                                      | 1.05             | #1130                                                  |

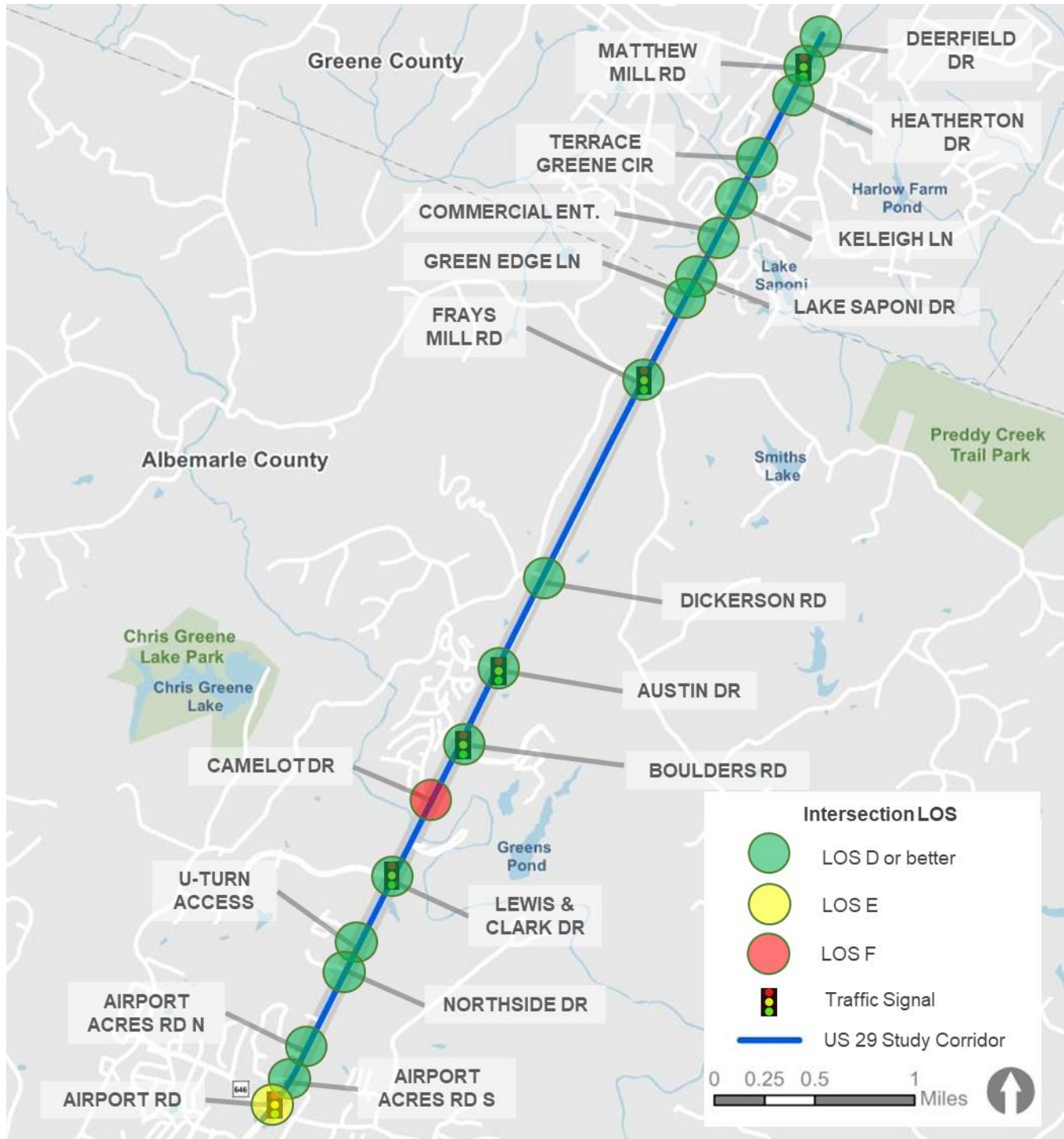
<sup>1</sup> Average intersection delay, LOS reported only for signalized intersections<sup>2</sup> Reported delay, level of service, v/c, and 95<sup>th</sup> percentile queues represent the worst-performing metric at each intersection<sup>3</sup> 95<sup>th</sup> percentile queues rounded up to the nearest whole number

Figure 7 Existing AM Conditions Operational Analysis



Note: All unsignalized intersections are displaying the worst, critical movement.  
 Source: Kittelson 2021.

Figure 8 Existing PM Conditions Operational Analysis



Note: All unsignalized intersections are displaying the worst, critical movement.  
Source: Kittelson 2021.

## 3.2 Future No-Build Conditions

In addition to considering existing traffic operations, VDOT analyzed future traffic operations at the study corridor intersections. VDOT identified a future design year and growth rates through which they could estimate and assess the influence of increased traffic volumes on the study intersections. The growth rates were pulled from Statewide Planning System historic growth graphs and determined to be a more accurate forecast than pulling site traffic from surrounding developments.

The future operations analysis assumed a design year of 2045, future background traffic volume annual growth varies throughout the corridor:

- US 33 to Greene Co. Line: 0.63%
- Greene Co. Line to Dickerson Rd: 0.65%
- Dickerson Rd to Camelot Rd: 0.64%
- Lewis & Clark Dr to Airport Rd: 0.88%
- South of Airport Rd: 1.24%

The analysis assumed new driveways at three intersections providing an estimate of how the existing transportation network could operate in a “no build” scenario:

- Village at Terrace Greene Access (east) at US 29/Heatherton Drive
- North Pointe Access 1 at US 29/Northside Drive
- North Pointe Access 2 at US 29/Lewis & Clark Drive

Traffic operations analyses were performed at study corridor intersections in accordance with the *Highway Capacity Manual (HCM)* using SYNCHRO 10. Due to non-NEMA phasing limitations, HCM 2000 was used. **Table 4** and **Figure 9** as well as

### KEY TERMS>>

- **Design Year:** Future year used to assess how existing traffic volumes will grow and influence a transportation network
- **Growth Rate:** Rate of growth applied to existing traffic counts to estimate how traffic volumes could increase in the future

**Table 5** and **Figure 10** summarize the operational analysis for the study intersections under the weekday a.m. and p.m. peak hour future no-build traffic conditions. The full analysis can be found in **Attachment C**.

Some of the intersections studied are forecast to perform acceptably during each of the peak hours studied with exceptions described below:

### AM Future Conditions

- Eight intersections operating at LOS E or F
- Four intersections at or over capacity
  - US 29/Frays Mill Road
  - US 29/Austin Drive
  - US 29/Airport Acres Road N
  - US 29/Airport Road

### PM Future Conditions

- Six intersections operating at LOS E or F
- Five intersections at or over capacity
  - US 29/Dickerson Road
  - US 29/Boulders Road
  - US 29/Camelot Drive
  - US 29/Lewis & Clark U-Turn S
  - US 29/Airport Road

**Table 4 Future No-Build AM Conditions Operational Analysis**

| Intersection                 | Peak hour | Intersection delay (sec) and level of service <sup>1</sup> | Worst-performing movement     | Delay (sec) and level of service <sup>2</sup> | v/c <sup>2</sup> | 95 <sup>th</sup> percentile queues (feet) <sup>3</sup> |
|------------------------------|-----------|------------------------------------------------------------|-------------------------------|-----------------------------------------------|------------------|--------------------------------------------------------|
| US 29/Deerfield Drive        | AM Peak   |                                                            | Deerfield Drive (EB)          | 26.8 (D)                                      | 0.49             | 12                                                     |
| US 29/Matthew Mill Road      | AM Peak   | 26.3 (E)                                                   | Matthew Mill Road (WB)        | 83.1 (F)                                      | 0.94             | #733                                                   |
| US 29/Heatherton Drive       | AM Peak   | 4.8 (A)                                                    | Heatherton Drive (EB)         | 51.3 (D)                                      | 0.71             | m92                                                    |
| US 29/Terrace Greene Circle  | AM Peak   |                                                            | Terrace Greene Circle (EB)    | 25.5 (D)                                      | 0.61             | 13                                                     |
| US 29/Keleigh Lane           | AM Peak   |                                                            | Keleigh Lane (EB)             | 35.1 (E)                                      | 0.58             | 29                                                     |
| US 29/Commercial Entrance    | AM Peak   |                                                            | Commercial Entrance (WB)      | 33.4 (D)                                      | 0.57             | 39                                                     |
| US 29/Lake Saponi Drive      | AM Peak   |                                                            | Lake Saponi Drive (WB)        | 11.1 (B)                                      | 0.69             | 6                                                      |
| US 29/Greene Edge Lane       | AM Peak   |                                                            | Greene Edge Lane (EB)         | 25.5 (D)                                      | 0.71             | 0                                                      |
| US 29/Frays Mill Road        | AM Peak   | 388.9 (F)                                                  | Frays Mill Road (WB)          | 1061.9 (F)                                    | 2.28             | #1707                                                  |
| US 29/Dickerson Road         | AM Peak   |                                                            | Dickerson Road (EB)           | 158.8 (F)                                     | 0.76             | 61                                                     |
| US 29/Austin Drive           | AM Peak   | 26.9 (C)                                                   | Austin Drive (EB)             | 51.0 (D)                                      | 1.00             | m566                                                   |
| US 29/Boulders Road          | AM Peak   | 51.1 (D)                                                   | Boulders Road (WB)            | 51.8 (D)                                      | 0.97             | #1193                                                  |
| US 29/Camelot Drive          | AM Peak   |                                                            | Camelot Drive (EB)            | 115.1 (F)                                     | 0.76             | 84                                                     |
| US 29/Lewis & Clark U-Turn N | AM Peak   | 18.4 (B)                                                   | Lewis & Clark U-Turn N (WB)   | 53.4 (D)                                      | 0.93             | #1247                                                  |
| US 29/Lewis & Clark Drive    | AM Peak   | 5.7 (A)                                                    | Lewis & Clark Drive (EB)      | 47.7 (D)                                      | 0.86             | #1132                                                  |
| US 29/Lewis & Clark U-Turn S | AM Peak   | 2.4 (A)                                                    | Lewis & Clark U-Turn S (EB)   | 51.8 (D)                                      | 0.41             | 71                                                     |
| US 29/U-Turn Access          | AM Peak   | 4.2 (A)                                                    | U-Turn Access (WB)            | 61.9 (E)                                      | 0.84             | 308                                                    |
| US 29/Northside Drive        | AM Peak   | 9.6 (A)                                                    | Northside Drive (WB)          | 117.1 (F)                                     | 0.42             | 127                                                    |
| US 29/Airport Acres Road N   | AM Peak   |                                                            | Airport Acres Road North (WB) | 197.2 (F)                                     | 1.08             | 4                                                      |
| US 29/Airport Acres Road S   | AM Peak   |                                                            | Airport Acres Road South (EB) | 61.4 (F)                                      | 0.54             | 12                                                     |
| US 29/Airport Road           | AM Peak   | 84.0 (F)                                                   | Airport Road (WB)             | 251.5 (F)                                     | 1.23             | #1132                                                  |

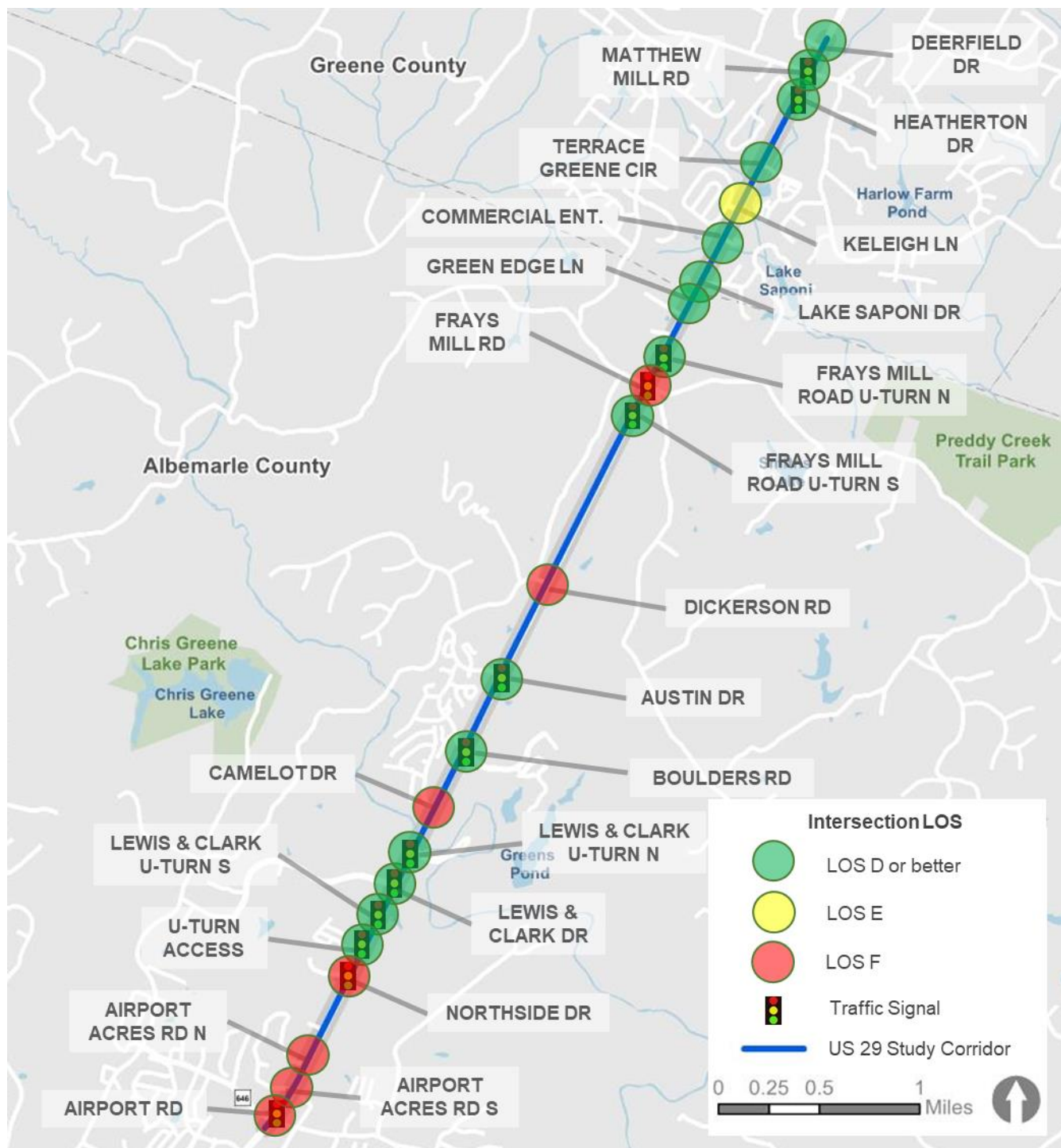
<sup>1</sup> Average intersection delay, LOS reported only for signalized intersections<sup>2</sup> Reported delay, LOS, v/c, and 95<sup>th</sup> percentile queues represent the worst-performing metric at each intersection<sup>3</sup> 95<sup>th</sup> percentile queues rounded up to the nearest whole number

**Table 5 Future No-Build PM Conditions Operational Analysis**

| Intersection                 | Peak hour | Intersection delay (sec) and level of service <sup>1</sup> | Worst-performing movement     | Delay (sec) and level of service <sup>2</sup> | v/c <sup>2</sup> | 95 <sup>th</sup> percentile queues (feet) <sup>3</sup> |
|------------------------------|-----------|------------------------------------------------------------|-------------------------------|-----------------------------------------------|------------------|--------------------------------------------------------|
| US 29/Deerfield Drive        | PM Peak   |                                                            | Deerfield Drive (EB)          | 23.9 (C)                                      | 0.51             | 29                                                     |
| US 29/Matthew Mill Road      | PM Peak   | 44.3 (D)                                                   | Matthew Mill Road (EB)        | 70.4 (E)                                      | 0.89             | #240                                                   |
| US 29/Heatherton Drive       | PM Peak   | 4.3 (A)                                                    | Heatherton Drive (EB)         | 26.9 (E)                                      | 0.65             | m302                                                   |
| US 29/Terrace Greene Circle  | PM Peak   |                                                            | Terrace Greene Circle (WB)    | 35.7 (E)                                      | 0.69             | 42                                                     |
| US 29/Keleigh Lane           | PM Peak   |                                                            | Keleigh Lane (EB)             | 18.1 (C)                                      | 0.61             | 6                                                      |
| US 29/Commercial Entrance    | PM Peak   |                                                            | Commercial Entrance (WB)      | 25.8 (D)                                      | 0.59             | 23                                                     |
| US 29/Lake Saponi Drive      | PM Peak   |                                                            | Lake Saponi Drive (WB)        | 29.9 (D)                                      | 0.69             | 22                                                     |
| US 29/Greene Edge Lane       | PM Peak   |                                                            | Greene Edge Lane (EB)         | 0.0 (A)                                       | 0.80             | 0                                                      |
| US 29/Frays Mill Road        | PM Peak   | 68.5 (E)                                                   | Frays Mill Road (WB)          | 148.4 (F)                                     | 1.03             | #1267                                                  |
| US 29/Dickerson Road         | PM Peak   |                                                            | Dickerson Road (EB)           | 40.6 (E)                                      | 1.02             | 29                                                     |
| US 29/Austin Drive           | PM Peak   | 10.3 (B)                                                   | Austin Drive (EB)             | 54.8 (D)                                      | 0.98             | m457                                                   |
| US 29/Boulders Road          | PM Peak   | 50.3 (D)                                                   | Boulders Road (WB)            | 95.6 (F)                                      | 1.00             | #1278                                                  |
| US 29/Camelot Drive          | PM Peak   |                                                            | Camelot Drive (WB)            | 452.7 (F)                                     | 0.80             | 91                                                     |
| US 29/Lewis & Clark U-Turn N | PM Peak   | 4.8 (A)                                                    | Lewis & Clark U-Turn N (WB)   | 168.7 (F)                                     | 0.50             | 115                                                    |
| US 29/Lewis & Clark Drive    | PM Peak   | 10.7 (B)                                                   | Lewis & Clark Drive (EB)      | 55.0 (D)                                      | 0.53             | m225                                                   |
| US 29/Lewis & Clark U-Turn S | PM Peak   | 53.0 (D)                                                   | Lewis & Clark U-Turn S (EB)   | 79.8 (E)                                      | 1.05             | #1418                                                  |
| US 29/U-Turn Access          | PM Peak   | 7.2 (A)                                                    | U-Turn Access (WB)            | 424.4 (F)                                     | 0.53             | 104                                                    |
| US 29/Northside Drive        | PM Peak   | 10.0 (B)                                                   | Northside Drive (EB)          | 57.3 (E)                                      | 0.78             | 571                                                    |
| US 29/Airport Acres Road N   | PM Peak   |                                                            | Airport Acres Road North (WB) | 43.5 (E)                                      | 0.64             | 7                                                      |
| US 29/Airport Acres Road S   | PM Peak   |                                                            | Airport Acres Road South (EB) | 18.9 (C)                                      | 0.78             | 5                                                      |
| US 29/Airport Road           | PM Peak   | 126.9 (F)                                                  | US 29 (WB)                    | 286.8 (F)                                     | 1.37             | #1586                                                  |

<sup>1</sup> Average intersection delay, LOS reported only for signalized intersections<sup>2</sup> Reported delay, LOS, v/c, and 95<sup>th</sup> percentile queues represent the worst-performing metric at each intersection<sup>3</sup> 95<sup>th</sup> percentile queues rounded up to the nearest whole number

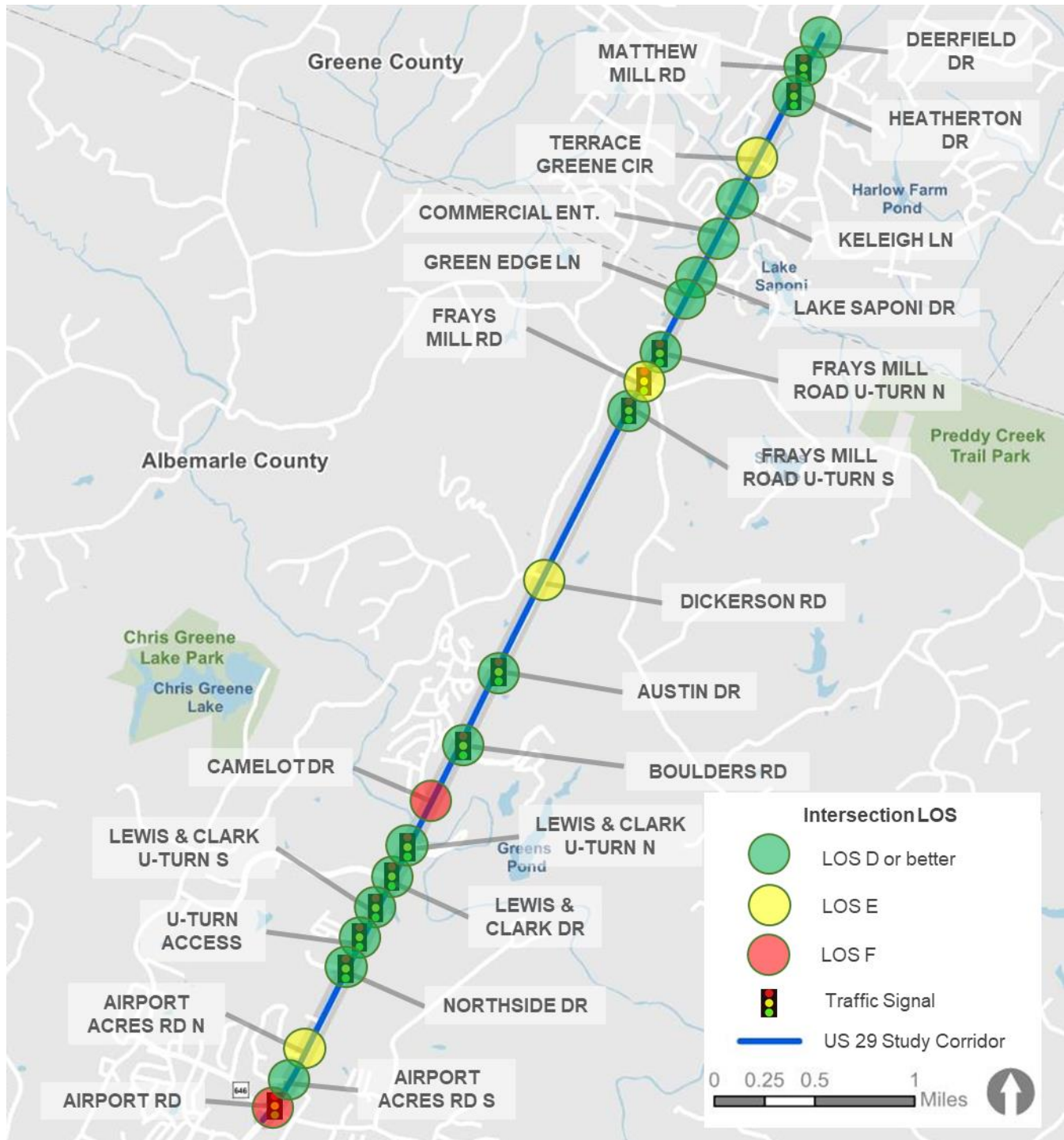
Figure 9 Future No-Build AM Conditions Operational Analysis



Note: All unsignalized intersections are displaying the worst, critical movement.

Source: Kittelson 2021.

Figure 10 Future No-Build PM Conditions Operational Analysis



Note: All unsignalized intersections are displaying the worst, critical movement.  
Source: Kittelson 2021.

## 4.0 BICYCLE AND PEDESTRIAN FACILITIES

This section summarizes the approach and findings of the bicycle and pedestrian facilities analysis. It outlines existing and planned facilities along the study corridor.

### 4.1 Existing Bicycle and Pedestrian Facilities

It is important for decision-makers to consider accessibility for non-motorized modes when planning. If walking and biking routes are uncomfortable and inconvenient, people are more likely to opt to drive over other modes of travel.

Industry research has shown that an average pedestrian is willing to walk five minutes, or a quarter-mile, to reach a destination. Improvements in the quality of the trip will increase the average walk distance. Convenient, comfortable walking and biking environments tend to have short blocks and a street grid, so non-motorized travelers can efficiently reach their destinations via multiple routes. Wide sidewalks, street trees, frequent crossing locations, and diverse land uses built to front the street all contribute to a safe and attractive environment where travelers will choose to walk, bike, or take transit.

Given this information, US 29 within the study limits is not a conducive environment for pedestrians and bicyclists. Existing bicycle and pedestrian facilities along the corridor are provided in the following paragraphs.

### Existing Bicycle and Pedestrian Facilities Data

Street-level bicycle and pedestrian facility data were obtained from Albemarle and Greene Counties.

### Existing Bicycle Facilities

Bicycle facilities are not present along US 29 within the study limits on either the west or east sides of the corridor. Additionally, no bicycle crossings exist. The closest facilities outside of the study area are trails within Preddy Creek Trail Park and Chris Greene Lake Park.

### Existing Pedestrian Facilities

Pedestrian facilities are not present along US 29 within the study limits on either the west or east sides of the corridor. However, at the study intersection of US 29/Airport Road, there is a sidewalk along the east side of US 29 south of Airport Road – technically outside of the study limits. Additionally, a sidewalk exists on the north side of Airport Road at the intersection. For both facilities at the southernmost study intersection though, no crossings exist here or anywhere else on the corridor within study limits.

## 4.2 Planned Bicycle and Pedestrian Facilities

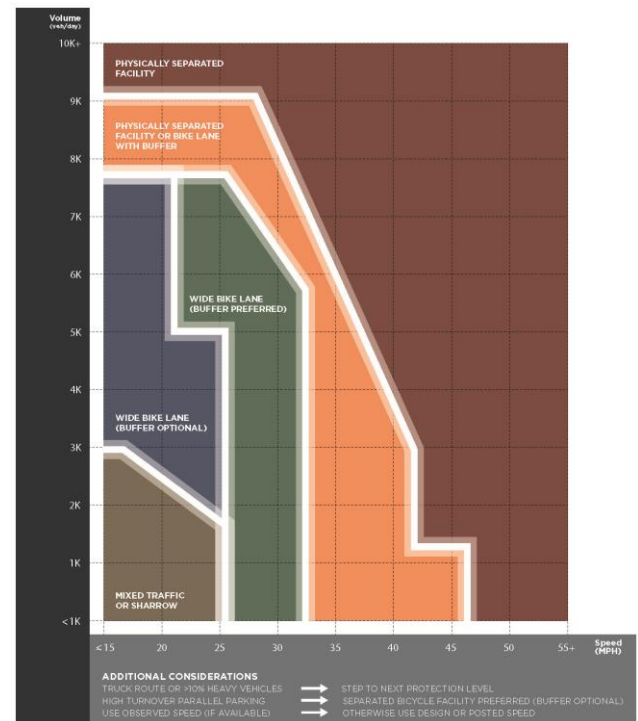
Wide, connected sidewalks and comfortable bicycle facilities both contribute to an appealing bicycle and pedestrian network. **Figure 11** provides guidance on the types of facilities that are appropriate based on roadway speed and volume. Research shows that trip purpose and bicycling experience level may inform bicyclist preferences. Casual and less experienced cyclists will feel safe traveling in mixed traffic along low-speed, low-volume roadways while roadways with higher speeds and volumes may warrant a separated bicycle facility<sup>1</sup>.

The minimum speed limit along the US 29 corridor is 45 mph, with most of the study area being 55 mph. Average daily traffic volumes range between 25,000 and 32,000 (**Table 1**). Given these speeds and volumes, the most appropriate bicycle facility along US 29 would be a physically separated facility.

### Planned Bicycle and Pedestrian Facilities Data

Planned bicycle and pedestrian facility data were obtained from Albemarle and Greene Counties.

**Figure 11 Designing for Comfortable Bicycle Facilities**



Source: Montgomery County Bicycle Planning Guidance 2014.

### Planned Bicycle and Pedestrian Facilities

Albemarle County and Greene County share a long-term vision to provide increased connections and a comfortable non-motorized network throughout the region. A shared-use path is recommended along the west side of US 29 in the study area as specified in the Jefferson Area Bicycle and Pedestrian Plan and Albemarle County Comprehensive Plan.

<sup>1</sup> American Association of State Highways and Transportation Officials, *Guide for the Development of Bicycle Facilities*, Fourth Edition, 2012, p. 15.

## 5.0 TRANSIT FACILITIES

Two transit services run in the vicinity of the US 29 study area in Albemarle and Greene Counties – Charlottesville Area Transit (CAT) and JAUNT.

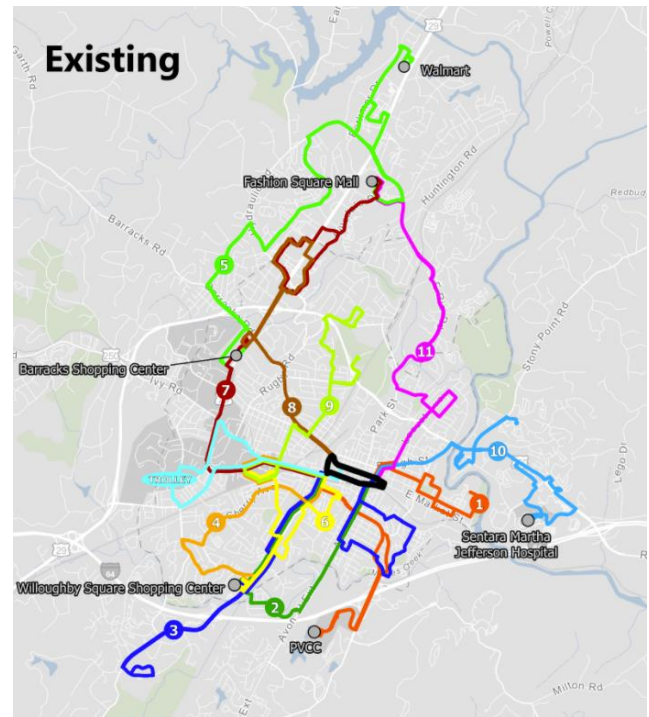
The sections that follow provide a brief description of the transit alignment, frequency, and span for each service nearest to the study area.

### Charlottesville Area Transit

CAT is the City of Charlottesville's transit system, providing fixed-route services into Albemarle County. CAT services eleven (11) routes plus a free trolley service between Downtown and UVA.

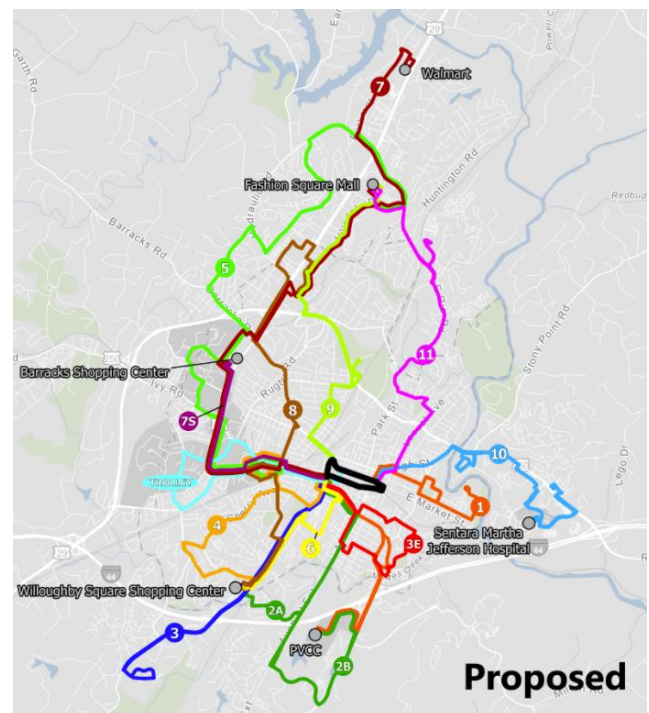
No route currently runs along US 29 within the study corridor. Bus Routes 5 and 7 provide the northernmost access of the transit system to the Walmart located 2.5 miles south of Hollymead Town Center and 3 miles south of Airport Road. Route 5 services this bus stop Monday through Saturday. Route 7 currently services this stop on Sundays but is proposed to be added to Route 7 for all days of the week. The existing CAT network is provided in **Figure 12**, while the proposed CAT network (including full Route 7 service to the Walmart) is provided in **Figure 13**.

**Figure 12 Existing CAT Network**



Source: CAT System Optimization Plan, 2021.

**Figure 13 Proposed CAT Network**



Source: CAT System Optimization Plan, 2021.

## JAUNT

JAUNT provides on-call transit, regional commuter, and paratransit service in Greene and Albemarle Counties. Its services in relation to the study area include:

- 29 North CONNECT
- Charlottesville Link Service

JAUNT's CONNECT routes are primarily for commuters into the City of Charlottesville. The 29 North CONNECT route spans from Hollymead Town Center in Albemarle County to UVA's Health System and Downtown. The northernmost bus stop on this route is the Hollymead Food Lion, on the east side of US 29 approximately 900 feet south of Airport Road. The 29 North route operates Monday through Friday.

Charlottesville Link Service is an alternate way to transit to the City of Charlottesville. This is an on-demand service with pick-up and drop-off locations anywhere in Greene County operating Monday through Friday. Reservations are required one day in advance.

# 6.0 SAFETY

This section summarizes the approach and findings of the crash analysis. The material below discusses study corridor crash patterns and trends; network screening; and the systemic safety evaluation. The analysis focuses on the study corridor only (US 29 between Deerfield Drive and Airport Road).

## 6.1 Key Findings

### Crash Patterns and Trends

- Over half of reported crashes were rear-end crashes (61%).
- Injuries and fatalities accounted for 33% of reported crashes.
- From 2015 to 2020, the top three crash types were rear end (61%), angle (11%), and fixed object – off road (9%).
- Intersection crashes (61%) outnumber segment crashes (39%).

### Network Screening and Systemic Findings

- VDOT screened the roadway network using: (1) the Equivalent Property Damage Only (EPDO) safety performance measure; and (2) a risk-based analysis to determine roadway characteristics potentially associated with high crash locations.
- The EPDO performance measure identifies locations that have exhibited a combined greater severity and frequency of crashes than other locations. It gives more weight to locations at which more severe crashes have occurred.

### KEY TERMS>>

- **Network Screening** –Evaluating the entire street network to identify high-crash locations based on number of crashes, severity of crashes, and traffic volume.
- **Systemic Analysis** – Identifying common characteristics associated with high-crash locations and prioritizing locations based on common characteristics and crash history.

**Common characteristics of high-crash intersections identified through the systemic analysis included:**

- Mostly signalized intersections
- High-speed (45 mph) approaches to the intersection
- No marked pedestrian crossings

**VDOT identified the following priority locations:**

- US 29 and Deerfield Drive
- US 29 and Heatherton Drive
- US 29 and Boulders Road
- US 29 and Lewis & Clark Drive
- US 29 and Matthews Mill Road
- US 29 and Austin Drive

## 6.2 Study Corridor Crash Patterns and Trends

The following presents study corridor crash trends and patterns. Findings from this section will be used to inform consideration for countermeasures and multimodal transportation solutions that could be effective along the study corridor.

### Data and Approach

The most recent six years of complete crash data available for the US 29 study corridor and surrounding area were obtained and analyzed from VDOT's database. The crash data used were from January 1, 2015 to December 31, 2020; there were 798 reported crashes in this period. The location data were used to geocode the crashes and map them in GIS software.

### Findings

Crash patterns and trends in the corridor data were identified by evaluating the following:

1. **Crash severity**
2. **Crash type**
3. **Lighting**
4. **Weather condition**
5. **Year**

In the six years of data analyzed, less than 1 percent of reported crashes involved pedestrians and bicyclists (three crashes). The rest of the reported crashes involved motor vehicles or motor vehicles and other objects (see **Figure 14**). Rear-end and angle were the top two crash types. VDOT will use these findings to help identify and prioritize safety treatments.

### Severity

**Table 5** summarizes the reported crashes by severity. Injury crashes are organized by severe injuries, other visible injuries, and injuries involving a complaint of pain but no visible injury.

**More than half (67%) of crashes recorded resulted in property damage only.**

**Three (<1%) crashes resulted in fatalities, and 35 crashes (4%) resulted in severe injury.**

**Table 5 Crash Severity, January 2014 – December 2018**

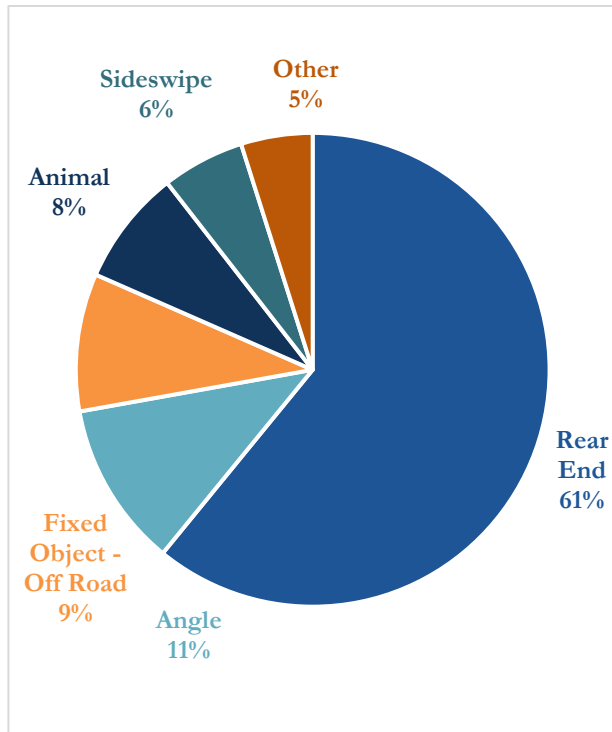
| Crash Severity             | Crash Count |
|----------------------------|-------------|
| Fatal                      | 3 (<1%)     |
| Injury (severe)            | 35 (4%)     |
| Injury (other visible)     | 121 (15%)   |
| Injury (complaint of pain) | 108 (14%)   |
| Property damage only (PDO) | 531 (67%)   |

Source: VDOT, Kittelson 2021.

### Crash Type

**Figure 14** identifies the crash types of the reported crashes.

**Figure 14 Vehicle Crash Types, January 2015 – December 2020**



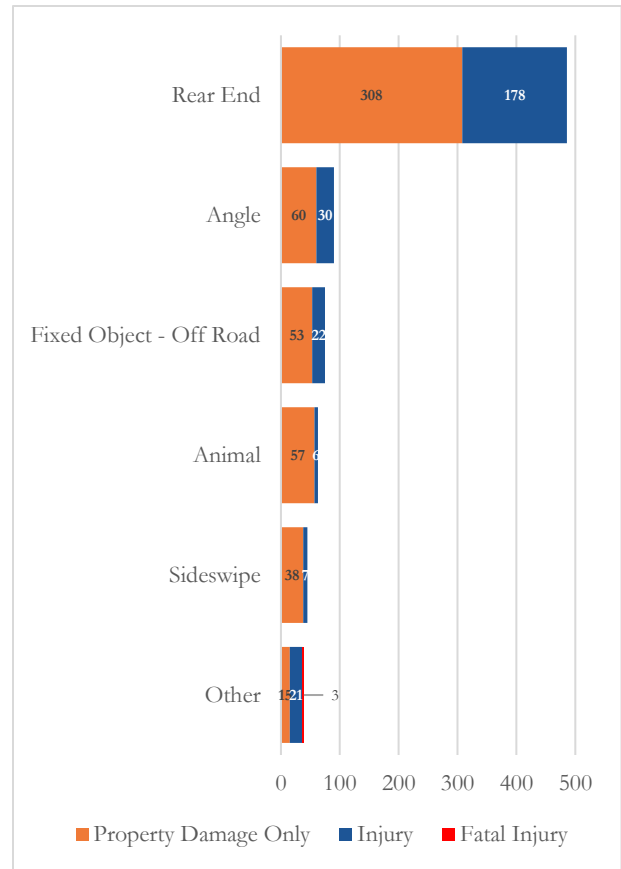
\*\*"Other" includes non-collision (12), fixed object – in road (4), head on (2), pedestrian (2), backed into (2), and crash types that were categorized as "Other" (17) in the data.  
Source: VDOT, Kittelson 2021.

**Rear end (61%) and angle (11%) crashes represent the largest proportions of crash types.**

**Rear end (486 total crashes) and angle (90 total crashes) make up more than half of all crash types.**

**Figure 15** summarizes reported crashes by crash type and severity.

**Figure 15 Reported Crashes by Crash Type and Severity, January 2015-December 2020**



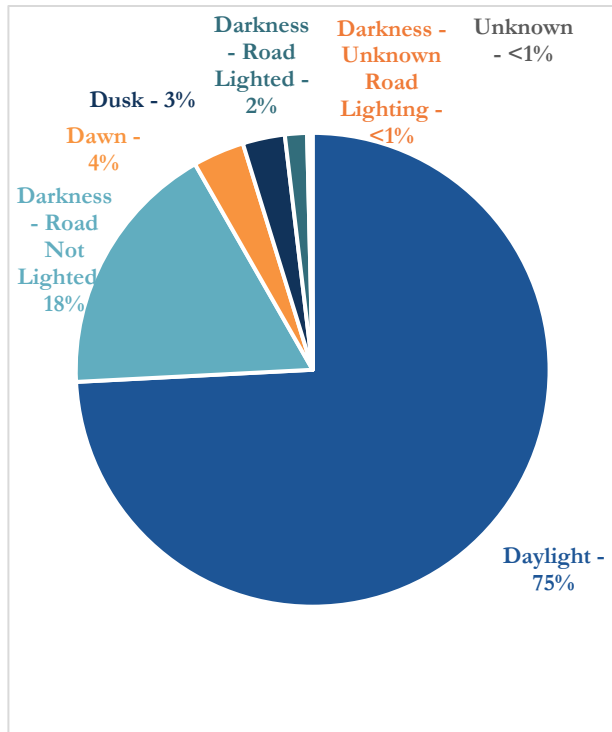
\*\*"Other" includes non-collision (12), fixed object – in road (4), head on (2), pedestrian (2), backed into (2), and crash types that were categorized as "Other" (17) in the data.  
Source: VDOT, Kittelson 2021.

**There were three fatal injuries along the study corridor. All three fatal injuries involved pedestrians.**

### Lighting

**Figure 16** displays the study corridor crash count by reported lighting condition.

**Figure 16 Percent of Reported Crashes by Lighting, January 2015 – December 2020**



Source: VDOT, Kittelson 2021.

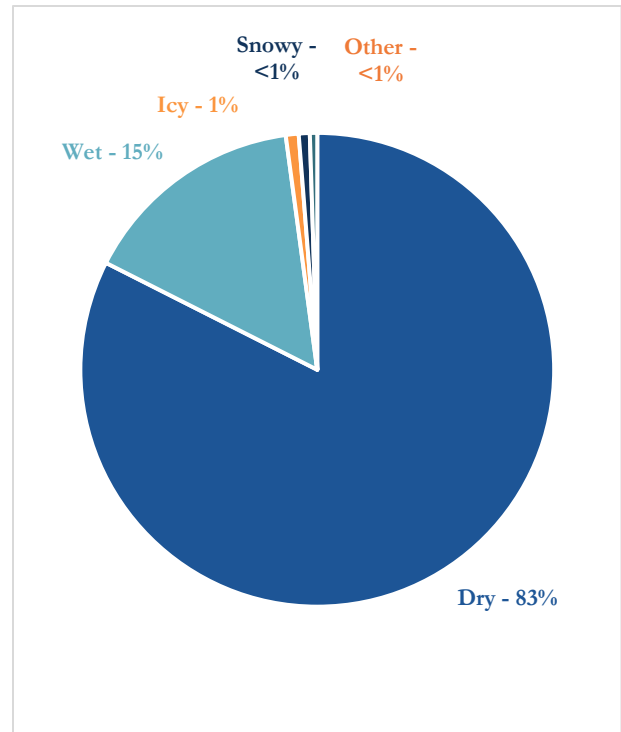
The majority of crashes (75%) occurred under daylight conditions.

Of the crashes that occurred in dark conditions, more crashes occurred in locations without street lights (18%).

### ***Roadway Surface Condition***

Figure 17 displays the study corridor crash count by reported roadway surface condition.

**Figure 17 Crashes by Roadway Surface Condition, January 2015 – December 2020**



Source: VDOT, Kittelson 2021.

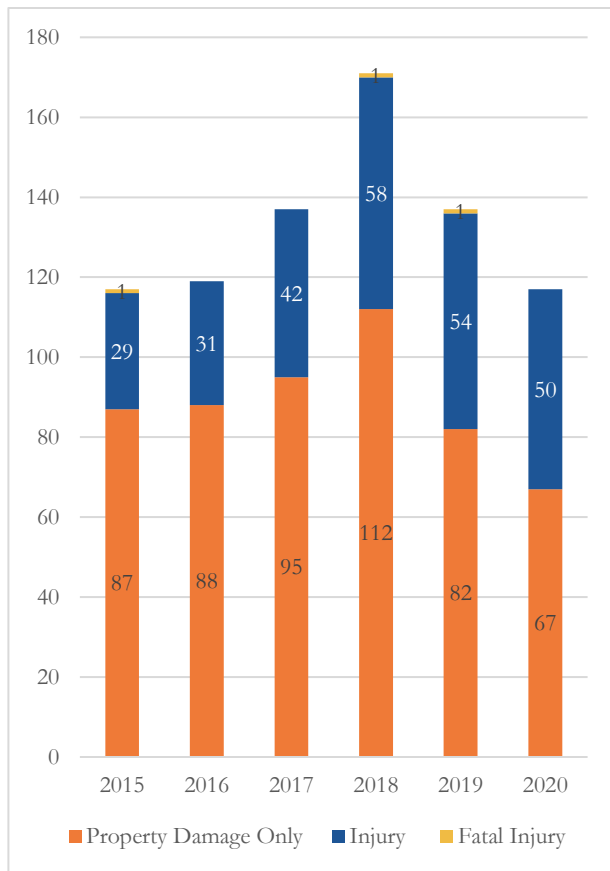
The majority of crashes (83%) occurred under dry conditions.

### ***Crash Year***

Figure 18 summarizes the crash count and severity of crashes by year.

2018 had the highest crash count (171).

The number of annual crashes has generally increased since 2015, consistent with observed growth in average annual daily traffic (AADT). However, AADT declined significantly in 2020 due the COVID-19 pandemic resulting in less crashes in 2020 than in previous years.

**Figure 18 Crashes by Year, January 2015 – December 2020**

Source: VDOT, Kittelson 2021.

## Districtwide Ranking

Using the latest *Highway Safety Manual (HSM)* methods, VDOT conducts a roadway network screening process to identify intersections and segments with Potential for Safety Improvement (PSI). The comparison allows cities and counties to identify local “hot spots” relative to peers. A number 1 ranking indicates the worst performer relative to other peers in the group. Intersections or segments that have a positive PSI value in three or more years are further highlighted as Target Safety Need (TSN) locations. This section presents relevant PSI and TSN rankings for VDOT’s Culpeper District between 2015 and 2020.

Two intersections and three segments along the study corridor were highlighted in the Culpeper District list of PSI locations (**Figure 19**):

**US 29 and Frays Mill Road (PSI District Rank: 12)**

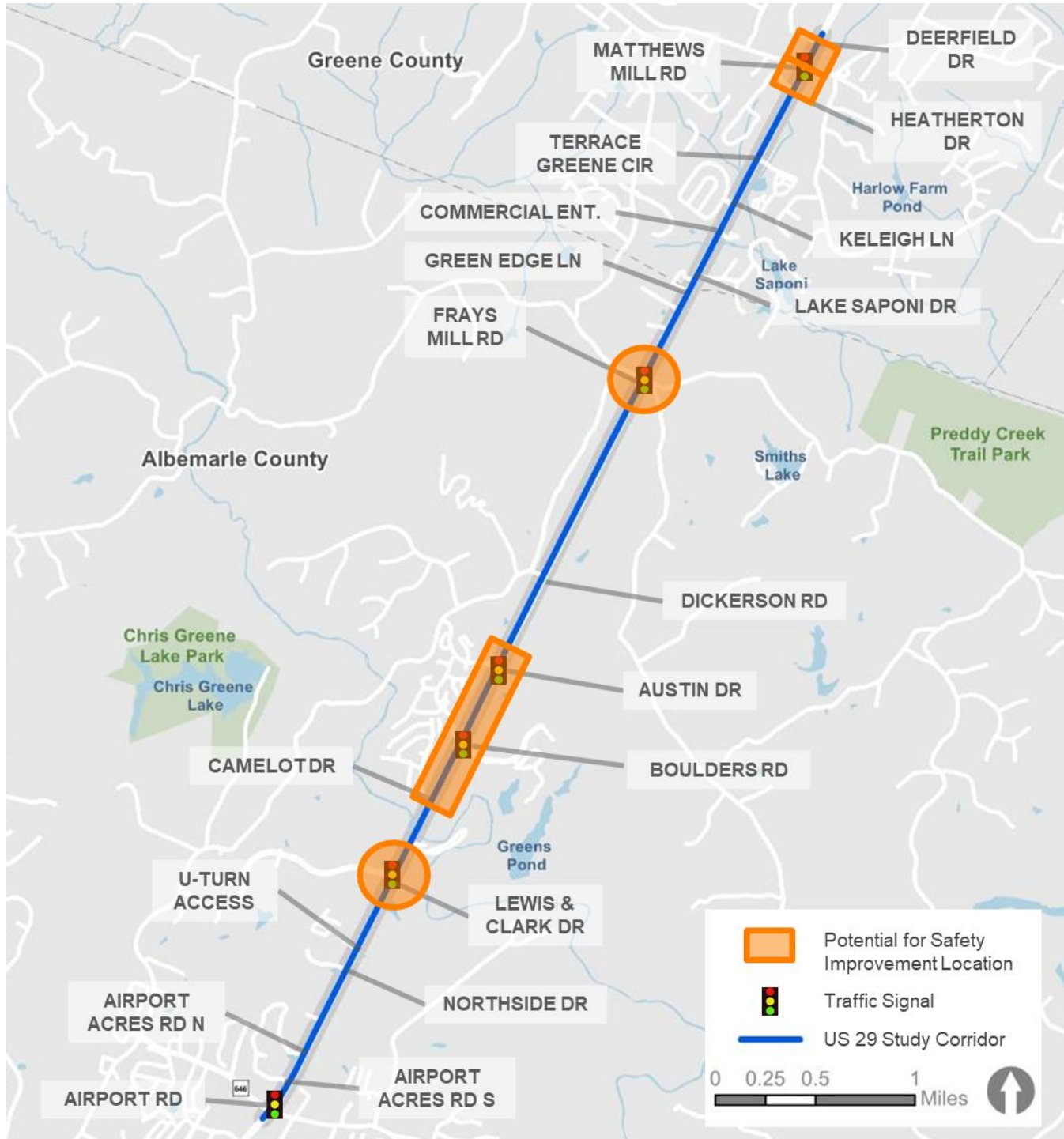
**US 29 and Lewis & Clark Drive (PSI District Rank: 20)**

**US 29 from Heatherton Drive to Matthews Mill Road (PSI Rank: 90)**

**US 29 from Matthews Mill Road to Deerfield Drive (PSI Rank: 93)**

**US 29 from Camelot Drive to Austin Drive (PSI Rank: 127)**

Figure 19 Potential for Safety Improvement (PSI) Locations



## 6.3 Network Screening and Systemic Findings

This section describes the network screening and systemic evaluation of the study corridor roadway network. First, the data and approach used to screen the study corridor roadway network and identify potential systemic crash characteristics are described.

### Data and Approach

VDOT identified the high-priority safety intersections using the EPDO network screening performance measure from the *HSM*. The EPDO screening calculation was performed for all intersections along the study corridor. The EPDO performance measure is described below.

#### ***Equivalent Property Damage Only***

The EPDO performance measure assigns weighting factors to crashes by severity relative to PDO crashes. The weighting factors used for the network screening are based on the crash costs by severity used for Caltrans' Highway Safety Improvement Program Benefit Calculator Tool. Crash costs vary based on location type: signalized intersection, unsignalized intersection, or roadway. The weights for each crash severity by location type are shown in **Table 6**.

**Table 6 Crash Weights by Severity and Location Type**

| Crash Weights by Location Type | Location Type              | Signalized Intersection | Unsignalized Intersection |
|--------------------------------|----------------------------|-------------------------|---------------------------|
|                                | Fatal                      | 126                     | 200                       |
| Crash Weights by Location Type | Injury (Severe)            | 126                     | 200                       |
|                                | Property Damage Only (PDO) | 1                       | 1                         |

|                            |       |       |
|----------------------------|-------|-------|
| Injury (Other Visible)     | 10.86 | 10.86 |
| Injury (Complaint of Pain) | 6.13  | 6.13  |
| Property Damage Only (PDO) | 1     | 1     |

Source: Caltrans, Highway Safety Improvement Program Benefit Calculator Tool, 2016.

The weights generally reflect an order of magnitude difference between the societal costs of fatal and severe injury collisions and non-severe injury collisions. The weighting factors intentionally weigh fatal and severe injuries equally to recognize that the difference between a severe injury crash and a fatal crash is often more of a function of the individuals involved – therefore, both represent locations where VDOT may want to prioritize improvements. The crash weights vary by location type due to the relative costs associated with the crash severity at those location types. Hence, fatal or severe crashes at an unsignalized intersection result in more persons injured or more severely injured in a fatal or severe injury crash and as a result have a higher average cost than at a signalized intersection.

Reported crashes were first coded by severity. Crashes within 250 feet of an intersection were then spatially joined and summarized in ArcGIS to develop the total number of crashes by severity at each intersection. Where intersections were less than 500 feet from each other, crashes were assigned to the nearest intersection. Crashes occurring more than 250 feet from an intersection were excluded from the intersection analysis.

The EPDO score for intersections was calculated by multiplying each crash severity total by its associated weight (by intersection type) and summing the results, using the following formula:

*EPDO Score = Fatal weight \* # of fatal crashes + severe injury weight \* # of severe injury crashes + other visible injury weight \* # of other visible injury crashes + complaint of pain injury weight \* # of complaint of pain injury weight crashes + PDO crashes*

The EPDO score was then annualized by dividing the score by the number of years (six) of crash data used in the analysis.

### **Identifying Common Characteristics of High-Crash Intersections**

VDOT applied a risk-based analysis of the priority locations identified through the intersection network screening. Risk is defined in this instance as common traffic or physical characteristics shared by the priority intersections.

To determine common crash characteristics, VDOT reviewed the following roadway characteristics for priority sites to help determine common crash characteristics for intersections:

- ▶ Number of vehicle lanes
- ▶ Posted speed
- ▶ Median presence
- ▶ Driveway and curb cut presence
- ▶ Intersection control type
- ▶ Dedicated left- or right-turn lane presence
- ▶ Intersection geometry (i.e., presence of offset approaches or intersection skew, number of approaches)
- ▶ Presence of marked crosswalks

For the highest-scoring intersections, roadway characteristic data was collected through a review of aerial imagery and a field visit. This included assessing the number of approaches, shoulder widths, and turn lane configurations, among other items.

VDOT identified consistent trends across the priority locations that could be tied to a roadway characteristic. These were documented as common crash characteristics. Common characteristics of high-crash intersections are discussed in the Findings section below.

## **Findings**

After calculating the network screening performance measures, VDOT identified priority intersections using the annualized EPDO scores. For intersection locations, the EPDO scores ranged from 3.0 (three crashes during the six-year time frame analyzed) to 662.4. **Figure 20** shows the results of the EPDO scoring by quartile for roadway intersection locations.

The results of the network screening analysis show that intersections with a reported crash history are primarily signalized, with the exceptions of the intersections at Deerfield Drive and at Heatherton Drive. One fatal injury occurred at the intersection of US 29 and Deerfield Drive and two fatal injuries occurred at US 29 and Heatherton Drive. VDOT developed its list of priority intersections using the highest-scoring EPDO intersections. The complete list of corridor intersections is given, along with their corresponding EPDO scores, in **Table 7**.

**Table 7 Intersection EPDO Scoring results**

| Intersection                              | Annualized Equivalent PDO Score | Intersection Control |
|-------------------------------------------|---------------------------------|----------------------|
| <b>Priority Intersections<sup>2</sup></b> |                                 |                      |
| US 29 & Deerfield Drive                   | 662.4                           | Unsignalized         |
| US 29 & Heatherton Drive                  | 640.6                           | Unsignalized         |
| US 29 & Boulders Road                     | 599.0                           | Signalized           |
| US 29 & Lewis and Clark Drive             | 532.7                           | Signalized           |
| US 29 & Matthew Mills Road                | 461.6                           | Signalized           |
| US 29 & Austin Drive                      | 356.4                           | Signalized           |
| <b>Other Corridor Intersections</b>       |                                 |                      |
| US 29 & Airport Road                      | 339.8                           | Signalized           |
| US 29 & Frays Mill Road                   | 280.2                           | Signalized           |
| US 29 & Northside Drive                   | 253.6                           | Unsignalized         |
| US 29 & U-Turn Access                     | 231.1                           | Unsignalized         |
| US 29 & Camelot Drive                     | 67.83                           | Unsignalized         |
| US 29 & Commercial Entrance               | 65.7                            | Unsignalized         |
| US 29 & Terrace Greene Circle             | 37.6                            | Unsignalized         |
| US 29 & Dickerson Road                    | 35.9                            | Unsignalized         |
| US 29 & Greene Edge Lane                  | 34.9                            | Unsignalized         |
| US 29 & Lake Saponi Drive                 | 16.86                           | Unsignalized         |
| US 29 & Keleigh Lane                      | 15.9                            | Unsignalized         |
| US 29 & Airport Acres South               | 7.0                             | Unsignalized         |
| US 29 & Airport Acres North               | 3.0                             | Unsignalized         |

Source: VDOT, Kittelson 2021.

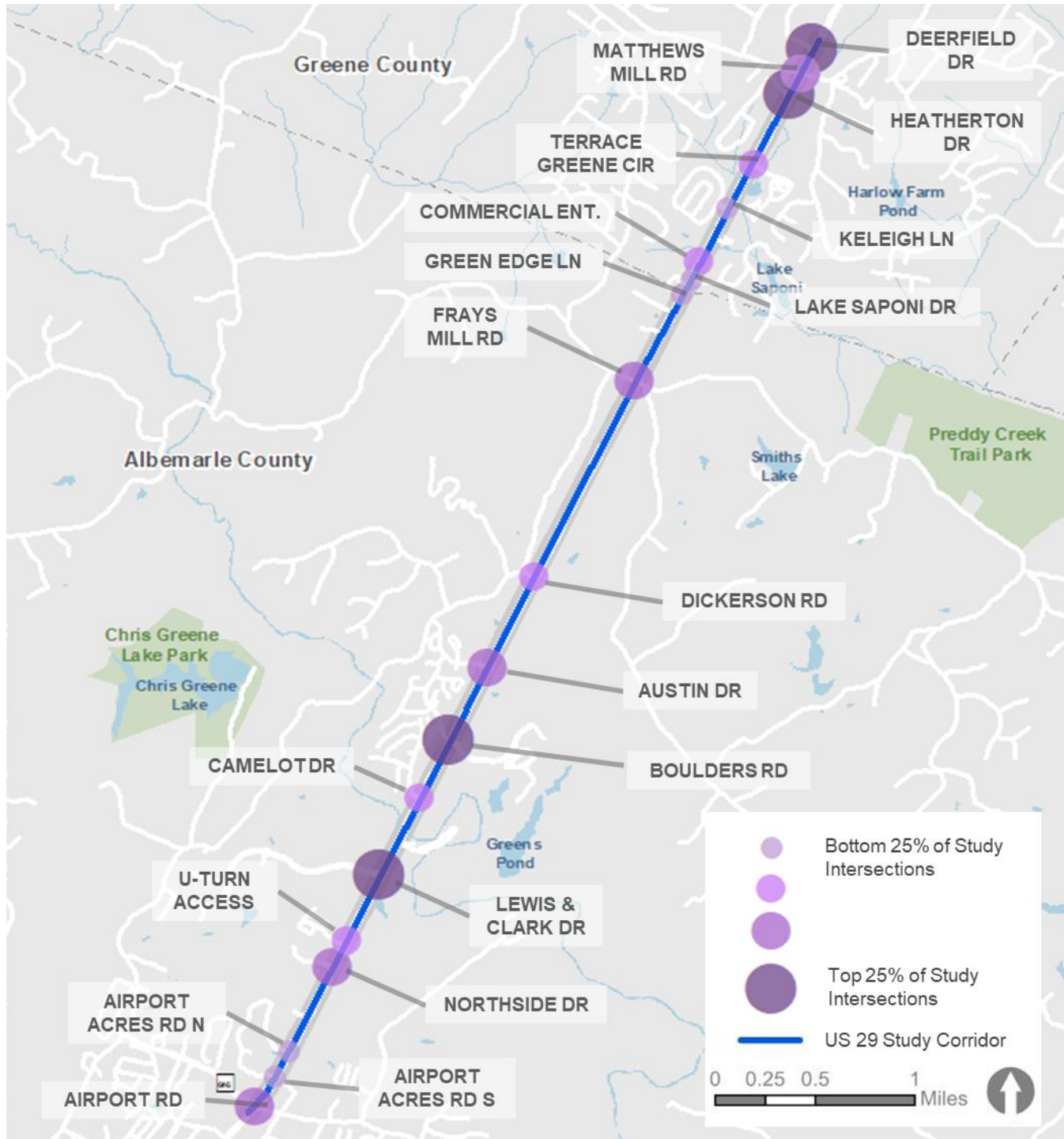
<sup>2</sup> A minimum EPDO score of 350 was selected as the criterion for priority corridor intersections.

### ***Common Characteristics of High-Crash Intersections***

Based on the review of the identified trends in roadway characteristics that were indicative of more crashes in the priority intersections, VDOT identified the following common characteristics:

- ▶ Mostly signalized intersections
- ▶ High-speed (45 mph) approaches to the intersection
- ▶ No marked pedestrian crossings

Figure 20 Intersection EPDO Scoring results by Quartile



Source: VDOT, Kittelson 2021.

## 6.4 Priority Locations

### Priority Locations

Priority intersections were drawn from the network screening and finalized based on discussions with VDOT and the project Stakeholder Group. The following six intersections were selected as the priority locations because they experienced the most severe crashes along the study corridor:

- ▶ US 29 and Deerfield Drive
- ▶ US 29 and Heatherton Drive
- ▶ US 29 and Boulders Road
- ▶ US 29 and Lewis & Clark Drive
- ▶ US 29 and Matthews Mill Road
- ▶ US 29 and Austin Drive

### Location-Specific Analysis Approach

To help inform selection of the focus sites, VDOT refined the corridor-wide crash pattern and trends analysis to focus on the individual priority intersections. This approach allows for a more nuanced understanding of how each priority intersection's safety performance varies across the study corridor. This refined understanding of the individual crash patterns and trends for each location will assist in developing a crash profile for each site that can be used to select appropriate safety treatments to improve safety performance.

This extraction process resulted in a focused crash data set of 251 priority intersection-related crashes. These 251 crashes account for 31% of all reported crashes on the US 29 corridor. Of these 251 crashes, 3 were fatal injury crashes and 29 were

severe injury crashes, accounting for 100% of all reported fatal injury crashes and 83% of severe injury crashes on the US 29 corridor. More detailed summaries of key crash characteristics are discussed below.

### Priority Locations Findings

This section discusses crash trends at the priority intersections, highlighting notable differences between patterns in a specific intersection and the corridor-wide patterns previously discussed. The analysis includes the following considerations:

- ▶ Crash severity
- ▶ Crash type
- ▶ Crash lighting conditions
- ▶ Crash weather condition
- ▶ Crash year

#### *Crash Severity*

**Table 8** summarizes reported crashes by priority intersection and severity.

The three fatal injury crashes occurred at two intersections. Two fatal injury crashes occurred at US 29 and Heatherton Drive and one fatal injury crash occurred at US 29 and Deerfield Drive.

All the priority intersections had at least one fatal or severe injury crash.

US 29 and Boulders Road had the most crashes of the study intersections (69 crashes). 65% of crashes at US 29 and Boulders Road resulted only in property damage. Therefore, the EPDO score was not as high as intersections that had less crashes, but more severe injury crashes.

#### *Crash Type*

The most common crash types at the priority locations are the following:

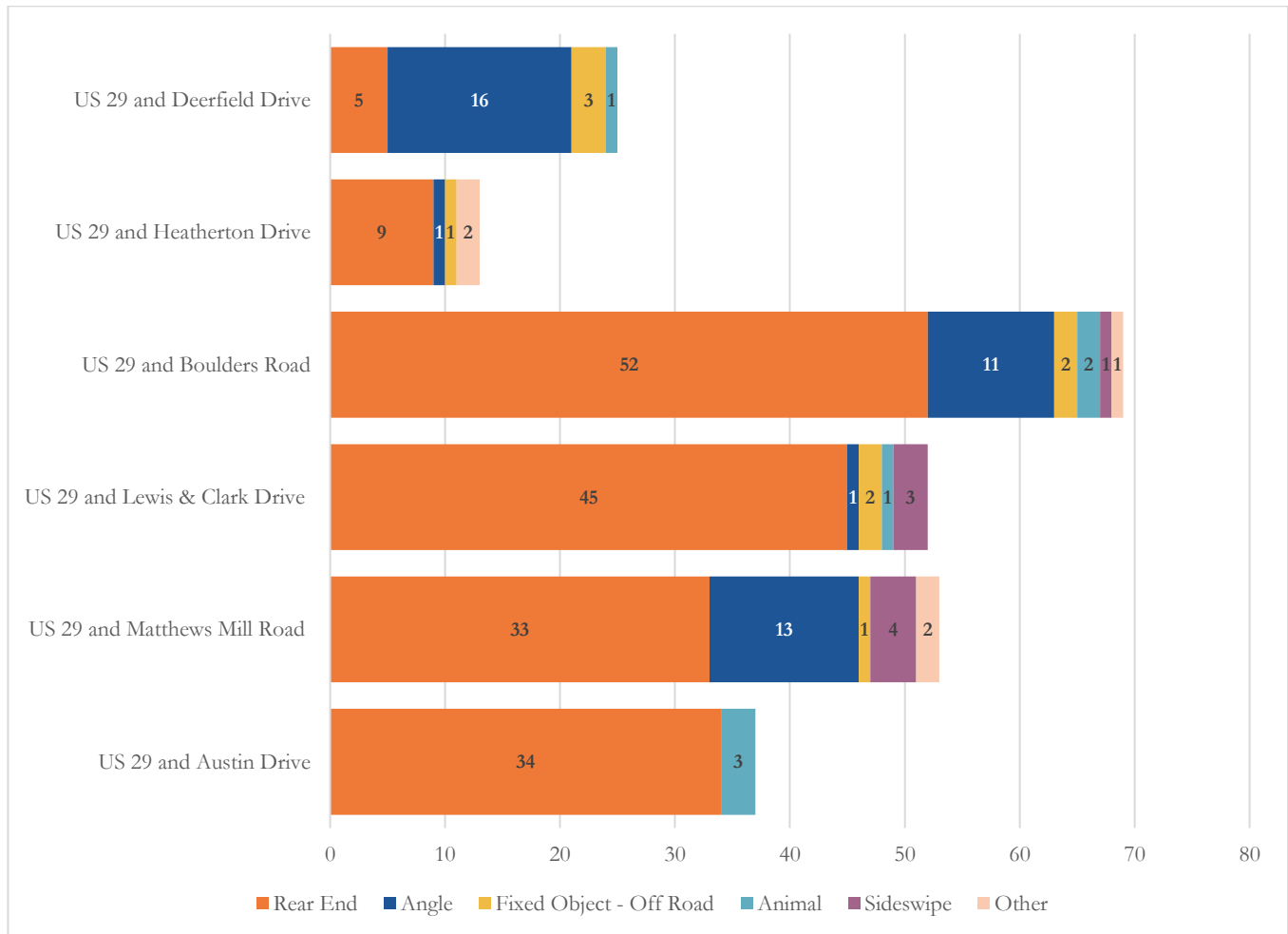
- ▶ Rear-end crashes (71%)
- ▶ Angle crashes (17%)
- ▶ Fixed object – off road (4%)

**Figure 21** summarizes crash types at each of the priority intersections.

**Table 8 Priority Locations Crashes by Intersection and Severity, January 2015 to December 2020**

| Intersection                  | Fatal Crashes | Severe Injury Crashes | Other Visible Injury Crashes | Complaint of Pain Injury Crashes | PDO Crashes | Total Crashes |
|-------------------------------|---------------|-----------------------|------------------------------|----------------------------------|-------------|---------------|
| US 29 and Deerfield Drive     | 1             | 0                     | 4                            | 2                                | 19          | 26            |
| US 29 and Heatherton Drive    | 2             | 0                     | 3                            | 1                                | 8           | 14            |
| US 29 and Boulders Road       | 0             | 11                    | 10                           | 3                                | 45          | 69            |
| US 29 and Lewis & Clark Drive | 0             | 11                    | 5                            | 3                                | 33          | 52            |
| US 29 and Matthews Mill Road  | 0             | 4                     | 14                           | 2                                | 33          | 53            |
| US 29 and Austin Drive        | 0             | 2                     | 6                            | 2                                | 27          | 37            |

Source: VDOT, Kittelson, 2021.

**Figure 21 Priority Locations Crash Type by Intersection, January 2015 to December 2020**

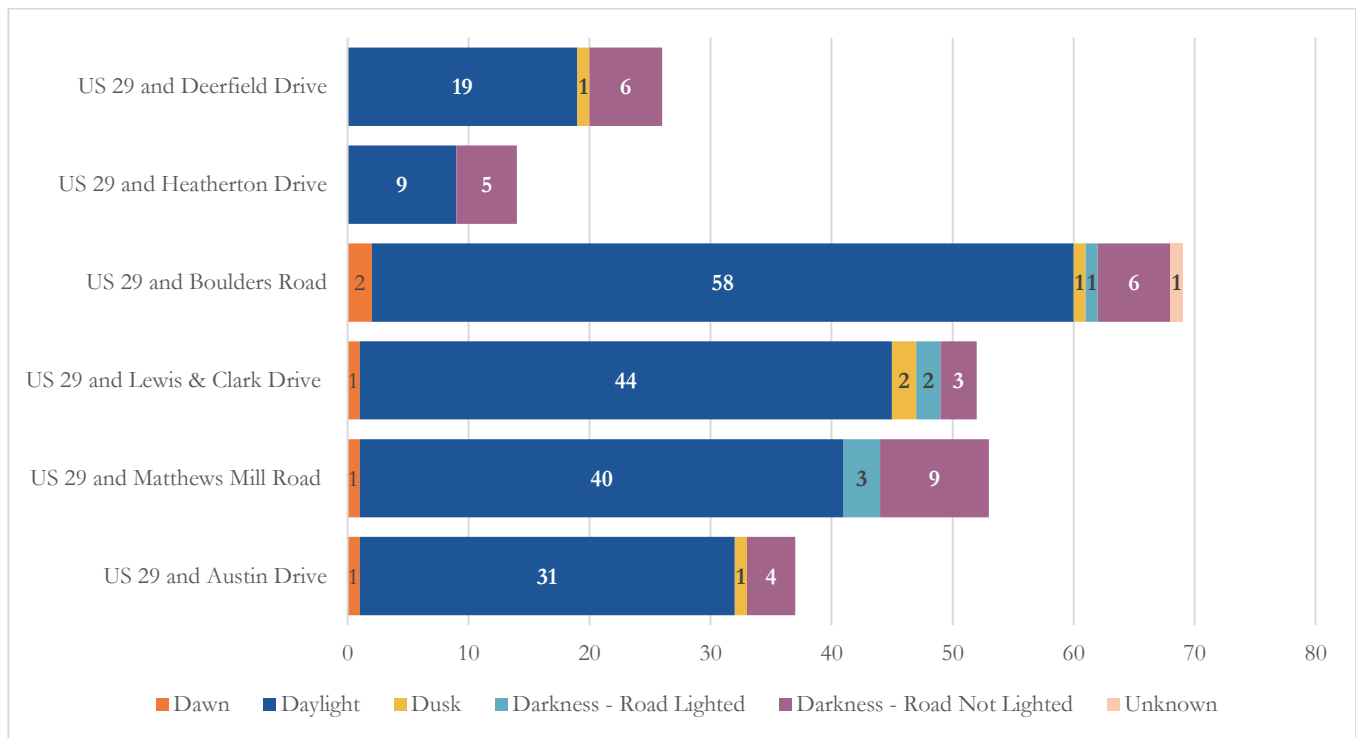
Source: VDOT, Kittelson, 2021.

- ▶ Rear end crashes represent a higher proportion of crashes compared to the corridor-wide average at five of the priority intersections:
  - US 29 and Heatherton Drive
  - US 29 and Boulders Road
  - US 29 and Lewis & Clark Drive
  - US 29 and Matthews Mill Road
  - US 29 and Austin Drive
- ▶ Angle crashes represent a higher proportion of crashes compared to the corridor-wide average at three of the priority intersections:
  - US 29 and Deerfield Drive
  - US 29 and Boulders Road
  - US 29 and Matthews Mill Road
- ▶ A pedestrian-involved crash occurred at two of the priority intersections:
  - US 29 and Deerfield Drive
  - US 29 and Heatherton Drive

### ***Crash Lighting Conditions***

As already discussed, most crashes on US 29 occur during daylight conditions. **Figure 22** summarizes crashes by lighting condition at each of the priority intersections.

- ▶ Daylight crashes represented the highest proportion of crashes on the priority intersections.
- ▶ Dark condition crashes (dusk-dawn, dark-streetlights, and dark-no streetlights) represent 20% of crashes at priority intersections.

**Figure 22 Reported Crashes by Lighting Condition, January 2015 to December 2020**

Source: VDOT, Kittelson, 2021.

### ***Crash Roadway Surface Condition***

As already reported, most crashes on US 29 involved dry roadway surface conditions. **Figure 23** summarizes crashes by roadway surface condition at each of the priority intersections.

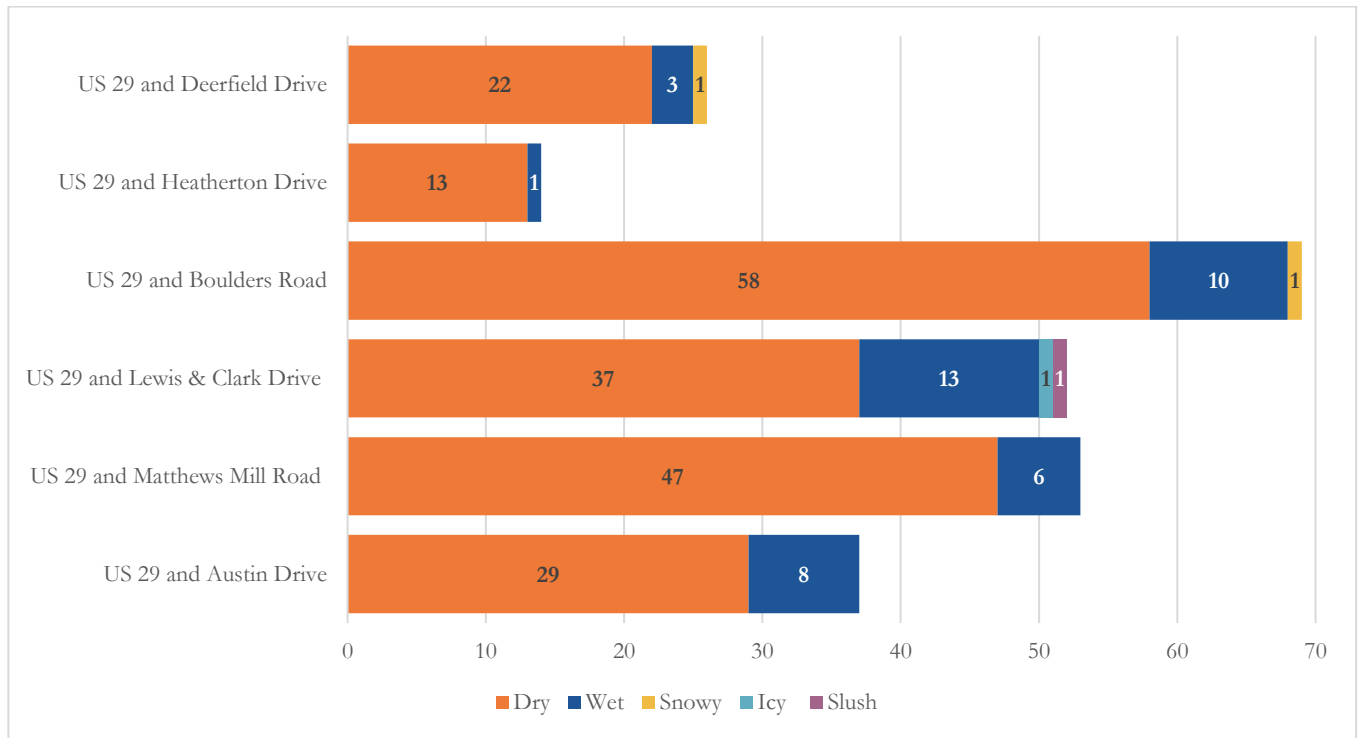
- ▶ Dry roadway surface conditions characterized the highest proportion of crashes on the priority intersections.
- ▶ Wet roadway surface conditions (wet, snowy, icy, slushy) characterized a higher proportion of crashes compared to the corridor-wide average at two of the priority intersections:
  - US 29 and Lewis & Clark Drive
  - US 29 and Austin Drive

### ***Crash Year***

As previously discussed, the most crashes occurred in 2018 along the US 29 corridor. Since 2018, crashes have declined slightly along the corridor. A similar pattern is shown at the priority intersections. **Figure 24** summarizes crashes by year at each of the priority intersections.

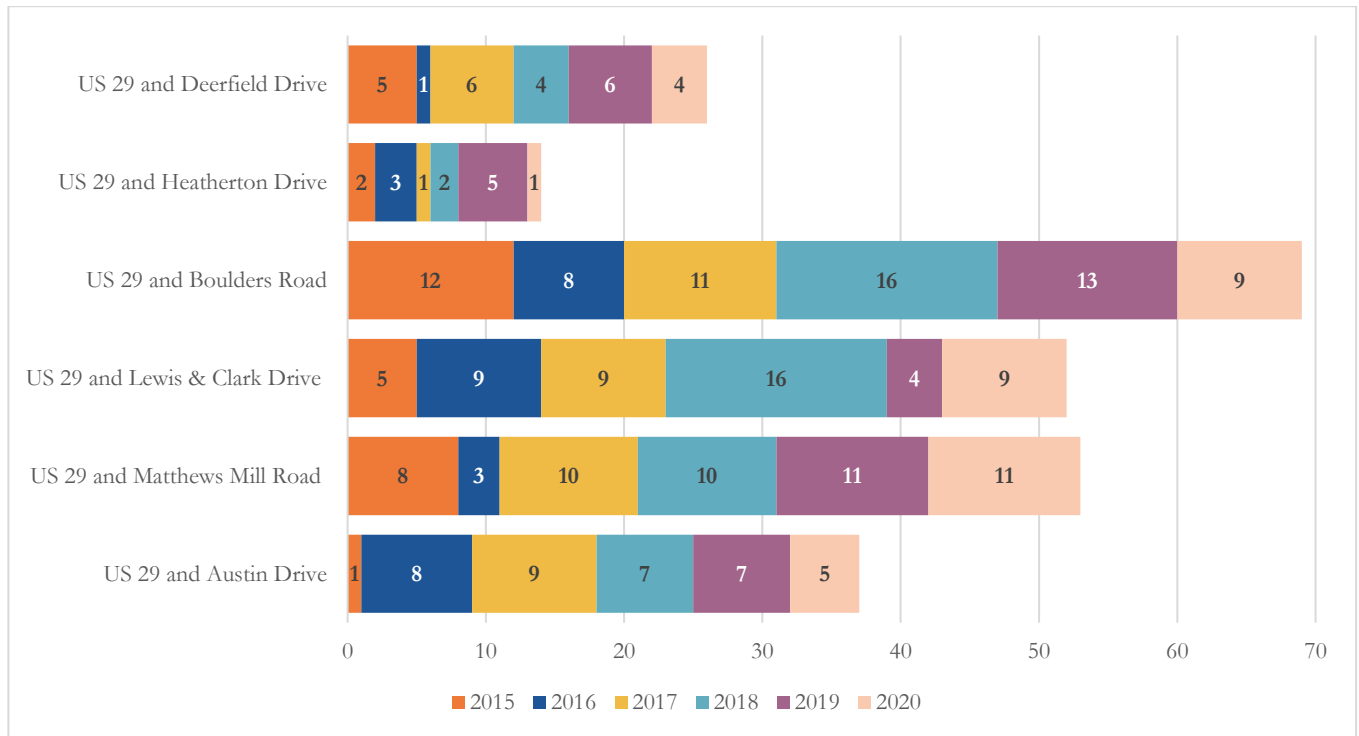
- ▶ More 2018 crashes occurred at four of the priority intersections compared to the corridor-wide average for 2018 crashes:
  - US 29 and Boulders Road
  - US 29 and Lewis & Clark Drive
  - US 29 and Matthews Mill Road
  - US 29 and Austin Drive

**Figure 23 Reported Crashes by Roadway Surface Condition, January 2015 to December 2020**



Source: VDOT, Kittelson, 2021.

**Figure 24 Reported Crashes by Crash Year, January 2015 to December 2020**



Source: VDOT, Kittelson, 2021.

## 7.0 CONCLUSION AND NEXT STEPS

The findings in this memorandum will inform the processes for refining the study goals, objectives, and evaluation criteria. VDOT will use insights from the existing conditions analysis to develop potential transportation alternatives that will help meet the vision and goals of the study. These transportation alternatives will be evaluated and revised based on the study evaluation measures and community input.

## **Attachment A** Traffic Counts

# Peggy Malone & Associates

## (800) 247-8602

File Name : 3-Route 29 and Deerfield Dr AM  
 Site Code :  
 Start Date : 12/6/2017  
 Page No : 1

Groups Printed- Car

|             | Route 29<br>Southbound |      |      |      |            | Family Dollar<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Deerfield Dr<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 7                      | 310  | 0    | 0    | 317        | 0                          | 0    | 0    | 0    | 0          | 0                      | 136  | 2    | 0    | 138        | 4                         | 0    | 2    | 0    | 6          | 461        |
| 07:15 AM    | 7                      | 350  | 0    | 0    | 357        | 0                          | 0    | 0    | 0    | 0          | 0                      | 194  | 5    | 0    | 199        | 7                         | 0    | 1    | 0    | 8          | 564        |
| 07:30 AM    | 2                      | 317  | 0    | 0    | 319        | 0                          | 0    | 0    | 0    | 0          | 0                      | 180  | 5    | 0    | 185        | 6                         | 0    | 1    | 0    | 7          | 511        |
| 07:45 AM    | 3                      | 296  | 0    | 0    | 299        | 0                          | 0    | 0    | 0    | 0          | 0                      | 137  | 1    | 0    | 138        | 5                         | 0    | 5    | 0    | 10         | 447        |
| Total       | 19                     | 1273 | 0    | 0    | 1292       | 0                          | 0    | 0    | 0    | 0          | 0                      | 647  | 13   | 0    | 660        | 22                        | 0    | 9    | 0    | 31         | 1983       |
| 08:00 AM    | 4                      | 292  | 0    | 0    | 296        | 0                          | 0    | 1    | 0    | 1          | 0                      | 167  | 1    | 0    | 168        | 6                         | 1    | 4    | 0    | 11         | 476        |
| 08:15 AM    | 7                      | 303  | 0    | 0    | 310        | 0                          | 0    | 0    | 0    | 0          | 0                      | 137  | 2    | 0    | 139        | 6                         | 0    | 3    | 0    | 9          | 458        |
| 08:30 AM    | 8                      | 250  | 1    | 0    | 259        | 0                          | 0    | 0    | 0    | 0          | 0                      | 175  | 6    | 0    | 181        | 1                         | 0    | 6    | 0    | 7          | 447        |
| 08:45 AM    | 5                      | 242  | 3    | 0    | 250        | 1                          | 1    | 0    | 0    | 2          | 2                      | 135  | 5    | 0    | 142        | 4                         | 0    | 4    | 0    | 8          | 402        |
| Total       | 24                     | 1087 | 4    | 0    | 1115       | 1                          | 1    | 1    | 0    | 3          | 2                      | 614  | 14   | 0    | 630        | 17                        | 1    | 17   | 0    | 35         | 1783       |
| Grand Total | 43                     | 2360 | 4    | 0    | 2407       | 1                          | 1    | 1    | 0    | 3          | 2                      | 1261 | 27   | 0    | 1290       | 39                        | 1    | 26   | 0    | 66         | 3766       |
| Apprch %    | 1.8                    | 98   | 0.2  | 0    |            | 33.3                       | 33.3 | 33.3 | 0    |            | 0.2                    | 97.8 | 2.1  | 0    |            | 59.1                      | 1.5  | 39.4 | 0    |            |            |
| Total %     | 1.1                    | 62.7 | 0.1  | 0    | 63.9       | 0                          | 0    | 0    | 0    | 0.1        | 0.1                    | 33.5 | 0.7  | 0    | 34.3       | 1                         | 0    | 0.7  | 0    | 1.8        |            |

|                                                            | Route 29<br>Southbound |      |      |            | Family Dollar<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Deerfield Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| 07:15 AM                                                   | 7                      | 350  | 0    | 357        | 0                          | 0    | 0    | 0          | 0                      | 194  | 5    | 199        | 7                         | 0    | 1    | 8          | 564        |
| 07:30 AM                                                   | 2                      | 317  | 0    | 319        | 0                          | 0    | 0    | 0          | 0                      | 180  | 5    | 185        | 6                         | 0    | 1    | 7          | 511        |
| 07:45 AM                                                   | 3                      | 296  | 0    | 299        | 0                          | 0    | 0    | 0          | 0                      | 137  | 1    | 138        | 5                         | 0    | 5    | 10         | 447        |
| 08:00 AM                                                   | 4                      | 292  | 0    | 296        | 0                          | 0    | 1    | 1          | 0                      | 167  | 1    | 168        | 6                         | 1    | 4    | 11         | 476        |
| Total Volume                                               | 16                     | 1255 | 0    | 1271       | 0                          | 0    | 1    | 1          | 0                      | 678  | 12   | 690        | 24                        | 1    | 11   | 36         | 1998       |
| % App. Total                                               | 1.3                    | 98.7 | 0    |            | 0                          | 0    | 100  |            | 0                      | 98.3 | 1.7  |            | 66.7                      | 2.8  | 30.6 |            |            |
| PHF                                                        | .571                   | .896 | .000 | .890       | .000                       | .000 | .250 | .250       | .000                   | .874 | .600 | .867       | .857                      | .250 | .550 | .818       | .886       |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 3-Route 29 and Deerfield Dr AM  
 Site Code :  
 Start Date : 12/6/2017  
 Page No : 1

Groups Printed- Truck

|             | Route 29<br>Southbound |      |      |      |            | Family Dollar<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Deerfield Dr<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                      | 9    | 0    | 0    | 9          | 0                          | 0    | 0    | 0    | 0          | 0                      | 21   | 0    | 0    | 21         | 0                         | 0    | 0    | 0    | 0          | 30         |
| 07:15 AM    | 0                      | 10   | 0    | 0    | 10         | 0                          | 0    | 0    | 0    | 0          | 0                      | 18   | 0    | 0    | 18         | 0                         | 0    | 0    | 0    | 0          | 28         |
| 07:30 AM    | 0                      | 13   | 0    | 0    | 13         | 0                          | 0    | 0    | 0    | 0          | 0                      | 21   | 1    | 0    | 22         | 1                         | 0    | 0    | 0    | 1          | 36         |
| 07:45 AM    | 2                      | 15   | 0    | 0    | 17         | 0                          | 0    | 0    | 0    | 0          | 0                      | 20   | 0    | 0    | 20         | 1                         | 0    | 0    | 0    | 1          | 38         |
| Total       | 2                      | 47   | 0    | 0    | 49         | 0                          | 0    | 0    | 0    | 0          | 0                      | 80   | 1    | 0    | 81         | 2                         | 0    | 0    | 0    | 2          | 132        |
| 08:00 AM    | 0                      | 13   | 0    | 0    | 13         | 0                          | 0    | 0    | 0    | 0          | 0                      | 12   | 0    | 0    | 12         | 1                         | 0    | 0    | 0    | 1          | 26         |
| 08:15 AM    | 1                      | 17   | 0    | 0    | 18         | 0                          | 0    | 0    | 0    | 0          | 0                      | 12   | 1    | 0    | 13         | 0                         | 0    | 0    | 0    | 0          | 31         |
| 08:30 AM    | 0                      | 15   | 0    | 0    | 15         | 0                          | 0    | 0    | 0    | 0          | 0                      | 17   | 0    | 0    | 17         | 0                         | 0    | 0    | 0    | 0          | 32         |
| 08:45 AM    | 0                      | 11   | 0    | 0    | 11         | 0                          | 0    | 0    | 0    | 0          | 0                      | 8    | 0    | 0    | 8          | 0                         | 0    | 0    | 0    | 0          | 19         |
| Total       | 1                      | 56   | 0    | 0    | 57         | 0                          | 0    | 0    | 0    | 0          | 0                      | 49   | 1    | 0    | 50         | 1                         | 0    | 0    | 0    | 1          | 108        |
| Grand Total | 3                      | 103  | 0    | 0    | 106        | 0                          | 0    | 0    | 0    | 0          | 0                      | 129  | 2    | 0    | 131        | 3                         | 0    | 0    | 0    | 3          | 240        |
| Apprch %    | 2.8                    | 97.2 | 0    | 0    |            | 0                          | 0    | 0    | 0    |            | 0                      | 98.5 | 1.5  | 0    |            | 100                       | 0    | 0    | 0    |            |            |
| Total %     | 1.2                    | 42.9 | 0    | 0    | 44.2       | 0                          | 0    | 0    | 0    | 0          | 0                      | 53.8 | 0.8  | 0    | 54.6       | 1.2                       | 0    | 0    | 0    | 1.2        |            |

|                                                            | Route 29<br>Southbound |      |      |            | Family Dollar<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Deerfield Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| 07:00 AM                                                   | 0                      | 9    | 0    | 9          | 0                          | 0    | 0    | 0          | 0                      | 21   | 0    | 21         | 0                         | 0    | 0    | 0          | 30         |
| 07:15 AM                                                   | 0                      | 10   | 0    | 10         | 0                          | 0    | 0    | 0          | 0                      | 18   | 0    | 18         | 0                         | 0    | 0    | 0          | 28         |
| 07:30 AM                                                   | 0                      | 13   | 0    | 13         | 0                          | 0    | 0    | 0          | 0                      | 21   | 1    | 22         | 1                         | 0    | 0    | 1          | 36         |
| 07:45 AM                                                   | 2                      | 15   | 0    | 17         | 0                          | 0    | 0    | 0          | 0                      | 20   | 0    | 20         | 1                         | 0    | 0    | 1          | 38         |
| Total Volume                                               | 2                      | 47   | 0    | 49         | 0                          | 0    | 0    | 0          | 0                      | 80   | 1    | 81         | 2                         | 0    | 0    | 2          | 132        |
| % App. Total                                               | 4.1                    | 95.9 | 0    |            | 0                          | 0    | 0    |            | 0                      | 98.8 | 1.2  |            | 100                       | 0    | 0    |            |            |
| PHF                                                        | .250                   | .783 | .000 | .721       | .000                       | .000 | .000 | .000       | .000                   | .952 | .250 | .920       | .500                      | .000 | .000 | .500       | .868       |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 3-Route 29 and Deerfield Dr AM

Site Code :

Start Date : 12/6/2017

Page No : 1

Groups Printed- Combined

|             | Route 29<br>Southbound |      |      |      |            | Family Dollar<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Deerfield Dr<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 7                      | 319  | 0    | 0    | 326        | 0                          | 0    | 0    | 0    | 0          | 0                      | 157  | 2    | 0    | 159        | 4                         | 0    | 2    | 0    | 6          | 491        |
| 07:15 AM    | 7                      | 360  | 0    | 0    | 367        | 0                          | 0    | 0    | 0    | 0          | 0                      | 212  | 5    | 0    | 217        | 7                         | 0    | 1    | 0    | 8          | 592        |
| 07:30 AM    | 2                      | 330  | 0    | 0    | 332        | 0                          | 0    | 0    | 0    | 0          | 0                      | 201  | 6    | 0    | 207        | 7                         | 0    | 1    | 0    | 8          | 547        |
| 07:45 AM    | 5                      | 311  | 0    | 0    | 316        | 0                          | 0    | 0    | 0    | 0          | 0                      | 157  | 1    | 0    | 158        | 6                         | 0    | 5    | 0    | 11         | 485        |
| Total       | 21                     | 1320 | 0    | 0    | 1341       | 0                          | 0    | 0    | 0    | 0          | 0                      | 727  | 14   | 0    | 741        | 24                        | 0    | 9    | 0    | 33         | 2115       |
| 08:00 AM    | 4                      | 305  | 0    | 0    | 309        | 0                          | 0    | 1    | 0    | 1          | 0                      | 179  | 1    | 0    | 180        | 7                         | 1    | 4    | 0    | 12         | 502        |
| 08:15 AM    | 8                      | 320  | 0    | 0    | 328        | 0                          | 0    | 0    | 0    | 0          | 0                      | 149  | 3    | 0    | 152        | 6                         | 0    | 3    | 0    | 9          | 489        |
| 08:30 AM    | 8                      | 265  | 1    | 0    | 274        | 0                          | 0    | 0    | 0    | 0          | 0                      | 192  | 6    | 0    | 198        | 1                         | 0    | 6    | 0    | 7          | 479        |
| 08:45 AM    | 5                      | 253  | 3    | 0    | 261        | 1                          | 1    | 0    | 0    | 2          | 2                      | 143  | 5    | 0    | 150        | 4                         | 0    | 4    | 0    | 8          | 421        |
| Total       | 25                     | 1143 | 4    | 0    | 1172       | 1                          | 1    | 1    | 0    | 3          | 2                      | 663  | 15   | 0    | 680        | 18                        | 1    | 17   | 0    | 36         | 1891       |
| Grand Total | 46                     | 2463 | 4    | 0    | 2513       | 1                          | 1    | 1    | 0    | 3          | 2                      | 1390 | 29   | 0    | 1421       | 42                        | 1    | 26   | 0    | 69         | 4006       |
| Apprch %    | 1.8                    | 98   | 0.2  | 0    |            | 33.3                       | 33.3 | 33.3 | 0    |            | 0.1                    | 97.8 | 2    | 0    |            | 60.9                      | 1.4  | 37.7 | 0    |            |            |
| Total %     | 1.1                    | 61.5 | 0.1  | 0    | 62.7       | 0                          | 0    | 0    | 0    | 0.1        | 0                      | 34.7 | 0.7  | 0    | 35.5       | 1                         | 0    | 0.6  | 0    | 1.7        |            |

|                                                            | Route 29<br>Southbound |      |      |            | Family Dollar<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Deerfield Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| 07:15 AM                                                   | 7                      | 360  | 0    | 367        | 0                          | 0    | 0    | 0          | 0                      | 212  | 5    | 217        | 7                         | 0    | 1    | 8          | 592        |
| 07:30 AM                                                   | 2                      | 330  | 0    | 332        | 0                          | 0    | 0    | 0          | 0                      | 201  | 6    | 207        | 7                         | 0    | 1    | 8          | 547        |
| 07:45 AM                                                   | 5                      | 311  | 0    | 316        | 0                          | 0    | 0    | 0          | 0                      | 157  | 1    | 158        | 6                         | 0    | 5    | 11         | 485        |
| 08:00 AM                                                   | 4                      | 305  | 0    | 309        | 0                          | 0    | 1    | 1          | 0                      | 179  | 1    | 180        | 7                         | 1    | 4    | 12         | 502        |
| Total Volume                                               | 18                     | 1306 | 0    | 1324       | 0                          | 0    | 1    | 1          | 0                      | 749  | 13   | 762        | 27                        | 1    | 11   | 39         | 2126       |
| % App. Total                                               | 1.4                    | 98.6 | 0    |            | 0                          | 0    | 100  |            | 0                      | 98.3 | 1.7  |            | 69.2                      | 2.6  | 28.2 |            |            |
| PHF                                                        | .643                   | .907 | .000 | .902       | .000                       | .000 | .250 | .250       | .000                   | .883 | .542 | .878       | .964                      | .250 | .550 | .813       | .898       |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 3-Route 29 and Deerfield Dr PM  
 Site Code :  
 Start Date : 12/6/2017  
 Page No : 1

Groups Printed- Car

|             | Route 29<br>Southbound |      |      |      |            | Family Dollar<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Deerfield Dr<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 17                     | 204  | 2    | 0    | 223        | 3                          | 1    | 1    | 0    | 5          | 5                      | 293  | 11   | 0    | 309        | 6                         | 2    | 13   | 0    | 21         | 558        |
| 04:15 PM    | 14                     | 209  | 0    | 0    | 223        | 7                          | 1    | 2    | 0    | 10         | 6                      | 328  | 10   | 0    | 344        | 1                         | 0    | 6    | 0    | 7          | 584        |
| 04:30 PM    | 13                     | 228  | 0    | 0    | 241        | 4                          | 1    | 3    | 0    | 8          | 7                      | 324  | 9    | 0    | 340        | 4                         | 0    | 9    | 0    | 13         | 602        |
| 04:45 PM    | 14                     | 217  | 2    | 0    | 233        | 6                          | 0    | 2    | 0    | 8          | 9                      | 363  | 7    | 0    | 379        | 3                         | 1    | 12   | 0    | 16         | 636        |
| Total       | 58                     | 858  | 4    | 0    | 920        | 20                         | 3    | 8    | 0    | 31         | 27                     | 1308 | 37   | 0    | 1372       | 14                        | 3    | 40   | 0    | 57         | 2380       |
| 05:00 PM    | 14                     | 203  | 1    | 0    | 218        | 4                          | 0    | 4    | 0    | 8          | 4                      | 323  | 6    | 0    | 333        | 9                         | 0    | 13   | 0    | 22         | 581        |
| 05:15 PM    | 11                     | 208  | 3    | 0    | 222        | 6                          | 2    | 2    | 0    | 10         | 8                      | 329  | 14   | 0    | 351        | 6                         | 0    | 8    | 0    | 14         | 597        |
| 05:30 PM    | 7                      | 217  | 1    | 0    | 225        | 2                          | 1    | 1    | 0    | 4          | 2                      | 370  | 6    | 0    | 378        | 4                         | 0    | 16   | 0    | 20         | 627        |
| 05:45 PM    | 7                      | 200  | 2    | 0    | 209        | 5                          | 1    | 3    | 0    | 9          | 4                      | 367  | 11   | 0    | 382        | 1                         | 0    | 7    | 0    | 8          | 608        |
| Total       | 39                     | 828  | 7    | 0    | 874        | 17                         | 4    | 10   | 0    | 31         | 18                     | 1389 | 37   | 0    | 1444       | 20                        | 0    | 44   | 0    | 64         | 2413       |
| Grand Total | 97                     | 1686 | 11   | 0    | 1794       | 37                         | 7    | 18   | 0    | 62         | 45                     | 2697 | 74   | 0    | 2816       | 34                        | 3    | 84   | 0    | 121        | 4793       |
| Apprch %    | 5.4                    | 94   | 0.6  | 0    |            | 59.7                       | 11.3 | 29   | 0    |            | 1.6                    | 95.8 | 2.6  | 0    |            | 28.1                      | 2.5  | 69.4 | 0    |            |            |
| Total %     | 2                      | 35.2 | 0.2  | 0    | 37.4       | 0.8                        | 0.1  | 0.4  | 0    | 1.3        | 0.9                    | 56.3 | 1.5  | 0    | 58.8       | 0.7                       | 0.1  | 1.8  | 0    | 2.5        |            |

|                                                            | Route 29<br>Southbound |      |      |            | Family Dollar<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Deerfield Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:45 PM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| 04:45 PM                                                   | 14                     | 217  | 2    | 233        | 6                          | 0    | 2    | 8          | 9                      | 363  | 7    | 379        | 3                         | 1    | 12   | 16         | 636        |
| 05:00 PM                                                   | 14                     | 203  | 1    | 218        | 4                          | 0    | 4    | 8          | 4                      | 323  | 6    | 333        | 9                         | 0    | 13   | 22         | 581        |
| 05:15 PM                                                   | 11                     | 208  | 3    | 222        | 6                          | 2    | 2    | 10         | 8                      | 329  | 14   | 351        | 6                         | 0    | 8    | 14         | 597        |
| 05:30 PM                                                   | 7                      | 217  | 1    | 225        | 2                          | 1    | 1    | 4          | 2                      | 370  | 6    | 378        | 4                         | 0    | 16   | 20         | 627        |
| Total Volume                                               | 46                     | 845  | 7    | 898        | 18                         | 3    | 9    | 30         | 23                     | 1385 | 33   | 1441       | 22                        | 1    | 49   | 72         | 2441       |
| % App. Total                                               | 5.1                    | 94.1 | 0.8  |            | 60                         | 10   | 30   |            | 1.6                    | 96.1 | 2.3  |            | 30.6                      | 1.4  | 68.1 |            |            |
| PHF                                                        | .821                   | .974 | .583 | .964       | .750                       | .375 | .563 | .750       | .639                   | .936 | .589 | .951       | .611                      | .250 | .766 | .818       | .960       |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 3-Route 29 and Deerfield Dr PM  
 Site Code :  
 Start Date : 12/6/2017  
 Page No : 1

Groups Printed- Truck

|             | Route 29<br>Southbound |      |      |      |            | Family Dollar<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Deerfield Dr<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                      | 16   | 0    | 0    | 16         | 0                          | 0    | 0    | 0    | 0          | 0                      | 8    | 1    | 0    | 9          | 0                         | 0    | 1    | 0    | 1          | 26         |
| 04:15 PM    | 0                      | 9    | 0    | 0    | 9          | 0                          | 0    | 0    | 0    | 0          | 0                      | 11   | 0    | 0    | 11         | 0                         | 0    | 1    | 0    | 1          | 21         |
| 04:30 PM    | 0                      | 8    | 0    | 0    | 8          | 0                          | 0    | 0    | 0    | 0          | 0                      | 7    | 0    | 0    | 7          | 0                         | 0    | 0    | 0    | 0          | 15         |
| 04:45 PM    | 0                      | 6    | 0    | 0    | 6          | 0                          | 0    | 0    | 0    | 0          | 1                      | 8    | 0    | 0    | 9          | 0                         | 0    | 0    | 0    | 0          | 15         |
| Total       | 0                      | 39   | 0    | 0    | 39         | 0                          | 0    | 0    | 0    | 0          | 1                      | 34   | 1    | 0    | 36         | 0                         | 0    | 2    | 0    | 2          | 77         |
| 05:00 PM    | 0                      | 4    | 0    | 0    | 4          | 0                          | 1    | 0    | 0    | 1          | 0                      | 13   | 0    | 0    | 13         | 0                         | 0    | 1    | 0    | 1          | 19         |
| 05:15 PM    | 0                      | 3    | 0    | 0    | 3          | 0                          | 0    | 0    | 0    | 0          | 0                      | 5    | 0    | 0    | 5          | 0                         | 0    | 0    | 0    | 0          | 8          |
| 05:30 PM    | 0                      | 7    | 0    | 0    | 7          | 0                          | 0    | 0    | 0    | 0          | 0                      | 10   | 0    | 0    | 10         | 0                         | 0    | 0    | 0    | 0          | 17         |
| 05:45 PM    | 0                      | 6    | 0    | 0    | 6          | 0                          | 0    | 0    | 0    | 0          | 0                      | 4    | 0    | 0    | 4          | 0                         | 0    | 0    | 0    | 0          | 10         |
| Total       | 0                      | 20   | 0    | 0    | 20         | 0                          | 1    | 0    | 0    | 1          | 0                      | 32   | 0    | 0    | 32         | 0                         | 0    | 1    | 0    | 1          | 54         |
| Grand Total | 0                      | 59   | 0    | 0    | 59         | 0                          | 1    | 0    | 0    | 1          | 1                      | 66   | 1    | 0    | 68         | 0                         | 0    | 3    | 0    | 3          | 131        |
| Apprch %    | 0                      | 100  | 0    | 0    |            | 0                          | 100  | 0    | 0    |            | 1.5                    | 97.1 | 1.5  | 0    |            | 0                         | 0    | 100  | 0    |            |            |
| Total %     | 0                      | 45   | 0    | 0    | 45         | 0                          | 0.8  | 0    | 0    | 0.8        | 0.8                    | 50.4 | 0.8  | 0    | 51.9       | 0                         | 0    | 2.3  | 0    | 2.3        |            |

|                                                            | Route 29<br>Southbound |      |      |            | Family Dollar<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Deerfield Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                           |      |      |            |            |
| 04:00 PM                                                   | 0                      | 16   | 0    | 16         | 0                          | 0    | 0    | 0          | 0                      | 8    | 1    | 9          | 0                         | 0    | 1    | 1          | 26         |
| 04:15 PM                                                   | 0                      | 9    | 0    | 9          | 0                          | 0    | 0    | 0          | 0                      | 11   | 0    | 11         | 0                         | 0    | 1    | 1          | 21         |
| 04:30 PM                                                   | 0                      | 8    | 0    | 8          | 0                          | 0    | 0    | 0          | 0                      | 7    | 0    | 7          | 0                         | 0    | 0    | 0          | 15         |
| 04:45 PM                                                   | 0                      | 6    | 0    | 6          | 0                          | 0    | 0    | 0          | 1                      | 8    | 0    | 9          | 0                         | 0    | 0    | 0          | 15         |
| Total Volume                                               | 0                      | 39   | 0    | 39         | 0                          | 0    | 0    | 0          | 1                      | 34   | 1    | 36         | 0                         | 0    | 2    | 2          | 77         |
| % App. Total                                               | 0                      | 100  | 0    |            | 0                          | 0    | 0    |            | 2.8                    | 94.4 | 2.8  |            | 0                         | 0    | 100  |            |            |
| PHF                                                        | .000                   | .609 | .000 | .609       | .000                       | .000 | .000 | .000       | .250                   | .773 | .250 | .818       | .000                      | .000 | .500 | .500       | .740       |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 3-Route 29 and Deerfield Dr PM

Site Code :

Start Date : 12/6/2017

Page No : 1

Groups Printed- Combined

|             | Route 29<br>Southbound |      |      |      |            | Family Dollar<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Deerfield Dr<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 17                     | 220  | 2    | 0    | 239        | 3                          | 1    | 1    | 0    | 5          | 5                      | 301  | 12   | 0    | 318        | 6                         | 2    | 14   | 0    | 22         | 584        |
| 04:15 PM    | 14                     | 218  | 0    | 0    | 232        | 7                          | 1    | 2    | 0    | 10         | 6                      | 339  | 10   | 0    | 355        | 1                         | 0    | 7    | 0    | 8          | 605        |
| 04:30 PM    | 13                     | 236  | 0    | 0    | 249        | 4                          | 1    | 3    | 0    | 8          | 7                      | 331  | 9    | 0    | 347        | 4                         | 0    | 9    | 0    | 13         | 617        |
| 04:45 PM    | 14                     | 223  | 2    | 0    | 239        | 6                          | 0    | 2    | 0    | 8          | 10                     | 371  | 7    | 0    | 388        | 3                         | 1    | 12   | 0    | 16         | 651        |
| Total       | 58                     | 897  | 4    | 0    | 959        | 20                         | 3    | 8    | 0    | 31         | 28                     | 1342 | 38   | 0    | 1408       | 14                        | 3    | 42   | 0    | 59         | 2457       |
| 05:00 PM    | 14                     | 207  | 1    | 0    | 222        | 4                          | 1    | 4    | 0    | 9          | 4                      | 336  | 6    | 0    | 346        | 9                         | 0    | 14   | 0    | 23         | 600        |
| 05:15 PM    | 11                     | 211  | 3    | 0    | 225        | 6                          | 2    | 2    | 0    | 10         | 8                      | 334  | 14   | 0    | 356        | 6                         | 0    | 8    | 0    | 14         | 605        |
| 05:30 PM    | 7                      | 224  | 1    | 0    | 232        | 2                          | 1    | 1    | 0    | 4          | 2                      | 380  | 6    | 0    | 388        | 4                         | 0    | 16   | 0    | 20         | 644        |
| 05:45 PM    | 7                      | 206  | 2    | 0    | 215        | 5                          | 1    | 3    | 0    | 9          | 4                      | 371  | 11   | 0    | 386        | 1                         | 0    | 7    | 0    | 8          | 618        |
| Total       | 39                     | 848  | 7    | 0    | 894        | 17                         | 5    | 10   | 0    | 32         | 18                     | 1421 | 37   | 0    | 1476       | 20                        | 0    | 45   | 0    | 65         | 2467       |
| Grand Total | 97                     | 1745 | 11   | 0    | 1853       | 37                         | 8    | 18   | 0    | 63         | 46                     | 2763 | 75   | 0    | 2884       | 34                        | 3    | 87   | 0    | 124        | 4924       |
| Apprch %    | 5.2                    | 94.2 | 0.6  | 0    |            | 58.7                       | 12.7 | 28.6 | 0    |            | 1.6                    | 95.8 | 2.6  | 0    |            | 27.4                      | 2.4  | 70.2 | 0    |            |            |
| Total %     | 2                      | 35.4 | 0.2  | 0    | 37.6       | 0.8                        | 0.2  | 0.4  | 0    | 1.3        | 0.9                    | 56.1 | 1.5  | 0    | 58.6       | 0.7                       | 0.1  | 1.8  | 0    | 2.5        |            |

|                                                            | Route 29 Southbound |      |      |            | Family Dollar Westbound |      |      |            | Route 29 Northbound |      |      |            | Deerfield Dr Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------|------|------|------------|---------------------|------|------|------------|------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                         |      |      |            |                     |      |      |            |                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:45 PM       |                     |      |      |            |                         |      |      |            |                     |      |      |            |                        |      |      |            |            |
| 04:45 PM                                                   | 14                  | 223  | 2    | 239        | 6                       | 0    | 2    | 8          | 10                  | 371  | 7    | 388        | 3                      | 1    | 12   | 16         | 651        |
| 05:00 PM                                                   | 14                  | 207  | 1    | 222        | 4                       | 1    | 4    | 9          | 4                   | 336  | 6    | 346        | 9                      | 0    | 14   | 23         | 600        |
| 05:15 PM                                                   | 11                  | 211  | 3    | 225        | 6                       | 2    | 2    | 10         | 8                   | 334  | 14   | 356        | 6                      | 0    | 8    | 14         | 605        |
| 05:30 PM                                                   | 7                   | 224  | 1    | 232        | 2                       | 1    | 1    | 4          | 2                   | 380  | 6    | 388        | 4                      | 0    | 16   | 20         | 644        |
| Total Volume                                               | 46                  | 865  | 7    | 918        | 18                      | 4    | 9    | 31         | 24                  | 1421 | 33   | 1478       | 22                     | 1    | 50   | 73         | 2500       |
| % App. Total                                               | 5                   | 94.2 | 0.8  |            | 58.1                    | 12.9 | 29   |            | 1.6                 | 96.1 | 2.2  |            | 30.1                   | 1.4  | 68.5 |            |            |
| PHF                                                        | .821                | .965 | .583 | .960       | .750                    | .500 | .563 | .775       | .600                | .935 | .589 | .952       | .611                   | .250 | .781 | .793       | .960       |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 1-Route 29 and Route 607  
 Site Code :  
 Start Date : 12/6/2017  
 Page No : 1

### Groups Printed- Car

|             | Route 29<br>Southbound |      |      |      |            | Route 607<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Route 607<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                      | 299  | 11   | 0    | 311        | 12                     | 15   | 94   | 0    | 121        | 34                     | 114  | 6    | 0    | 154        | 38                     | 10   | 15   | 0    | 63         | 649        |
| 07:15 AM    | 0                      | 329  | 18   | 0    | 347        | 20                     | 7    | 116  | 0    | 143        | 22                     | 142  | 10   | 0    | 174        | 48                     | 10   | 19   | 0    | 77         | 741        |
| 07:30 AM    | 8                      | 289  | 14   | 0    | 311        | 24                     | 6    | 117  | 0    | 147        | 24                     | 134  | 9    | 0    | 167        | 45                     | 10   | 21   | 0    | 76         | 701        |
| 07:45 AM    | 6                      | 276  | 10   | 0    | 292        | 14                     | 6    | 80   | 0    | 100        | 21                     | 96   | 12   | 0    | 129        | 34                     | 13   | 18   | 0    | 65         | 586        |
| Total       | 15                     | 1193 | 53   | 0    | 1261       | 70                     | 34   | 407  | 0    | 511        | 101                    | 486  | 37   | 0    | 624        | 165                    | 43   | 73   | 0    | 281        | 2677       |
| 08:00 AM    | 4                      | 261  | 15   | 0    | 280        | 23                     | 5    | 68   | 0    | 96         | 40                     | 140  | 14   | 0    | 194        | 39                     | 4    | 14   | 0    | 57         | 627        |
| 08:15 AM    | 6                      | 300  | 16   | 0    | 322        | 7                      | 11   | 83   | 0    | 101        | 23                     | 101  | 4    | 0    | 128        | 28                     | 6    | 22   | 0    | 56         | 607        |
| 08:30 AM    | 6                      | 240  | 8    | 0    | 254        | 14                     | 4    | 77   | 0    | 95         | 24                     | 137  | 11   | 0    | 172        | 29                     | 3    | 8    | 0    | 40         | 561        |
| 08:45 AM    | 7                      | 221  | 4    | 0    | 232        | 6                      | 5    | 79   | 0    | 90         | 21                     | 118  | 4    | 0    | 143        | 23                     | 4    | 11   | 0    | 38         | 503        |
| Total       | 23                     | 1022 | 43   | 0    | 1088       | 50                     | 25   | 307  | 0    | 382        | 108                    | 496  | 33   | 0    | 637        | 119                    | 17   | 55   | 0    | 191        | 2298       |
| 09:00 AM    | 5                      | 199  | 16   | 0    | 220        | 9                      | 5    | 56   | 0    | 70         | 24                     | 132  | 11   | 0    | 167        | 27                     | 2    | 25   | 0    | 54         | 511        |
| 09:15 AM    | 2                      | 196  | 17   | 0    | 215        | 12                     | 4    | 58   | 0    | 74         | 26                     | 124  | 5    | 0    | 155        | 13                     | 3    | 11   | 0    | 27         | 471        |
| 09:30 AM    | 4                      | 193  | 9    | 0    | 206        | 6                      | 7    | 51   | 0    | 64         | 32                     | 115  | 11   | 0    | 158        | 20                     | 3    | 13   | 0    | 36         | 464        |
| 09:45 AM    | 10                     | 187  | 11   | 0    | 208        | 8                      | 7    | 37   | 0    | 52         | 22                     | 124  | 13   | 0    | 159        | 26                     | 3    | 6    | 0    | 35         | 454        |
| Total       | 21                     | 775  | 53   | 0    | 849        | 35                     | 23   | 202  | 0    | 260        | 104                    | 495  | 40   | 0    | 639        | 86                     | 11   | 55   | 0    | 152        | 1900       |
| 10:00 AM    | 10                     | 175  | 11   | 0    | 196        | 9                      | 2    | 41   | 0    | 52         | 22                     | 87   | 5    | 0    | 114        | 21                     | 9    | 16   | 0    | 46         | 408        |
| 10:15 AM    | 12                     | 186  | 9    | 0    | 207        | 10                     | 4    | 43   | 0    | 57         | 21                     | 134  | 13   | 0    | 168        | 20                     | 4    | 8    | 0    | 32         | 464        |
| 10:30 AM    | 3                      | 188  | 13   | 0    | 204        | 6                      | 6    | 36   | 0    | 48         | 22                     | 104  | 14   | 0    | 140        | 20                     | 4    | 9    | 0    | 33         | 425        |
| 10:45 AM    | 8                      | 149  | 14   | 0    | 171        | 12                     | 7    | 25   | 0    | 44         | 29                     | 130  | 7    | 0    | 166        | 13                     | 2    | 13   | 0    | 28         | 409        |
| Total       | 33                     | 698  | 47   | 0    | 778        | 37                     | 19   | 145  | 0    | 201        | 94                     | 455  | 39   | 0    | 588        | 74                     | 19   | 46   | 0    | 139        | 1706       |
| 11:00 AM    | 5                      | 160  | 16   | 0    | 181        | 5                      | 6    | 28   | 0    | 39         | 26                     | 138  | 22   | 0    | 186        | 13                     | 10   | 14   | 0    | 37         | 443        |
| 11:15 AM    | 5                      | 146  | 11   | 0    | 162        | 4                      | 9    | 37   | 0    | 50         | 28                     | 170  | 18   | 0    | 216        | 17                     | 6    | 9    | 0    | 32         | 460        |
| 11:30 AM    | 9                      | 163  | 7    | 0    | 179        | 12                     | 8    | 31   | 0    | 51         | 30                     | 135  | 15   | 0    | 180        | 14                     | 8    | 19   | 0    | 41         | 451        |
| 11:45 AM    | 6                      | 133  | 10   | 0    | 149        | 10                     | 6    | 21   | 0    | 37         | 31                     | 129  | 14   | 0    | 174        | 18                     | 12   | 10   | 0    | 40         | 400        |
| Total       | 25                     | 602  | 44   | 0    | 671        | 31                     | 29   | 117  | 0    | 177        | 115                    | 572  | 69   | 0    | 756        | 62                     | 36   | 52   | 0    | 150        | 1754       |
| 12:00 PM    | 4                      | 134  | 21   | 0    | 159        | 8                      | 6    | 31   | 0    | 45         | 34                     | 178  | 24   | 0    | 236        | 25                     | 8    | 13   | 0    | 46         | 486        |
| 12:15 PM    | 8                      | 147  | 18   | 0    | 173        | 7                      | 8    | 46   | 0    | 61         | 39                     | 160  | 19   | 0    | 218        | 24                     | 7    | 11   | 0    | 42         | 494        |
| 12:30 PM    | 11                     | 166  | 17   | 0    | 194        | 12                     | 7    | 27   | 0    | 46         | 33                     | 158  | 19   | 0    | 210        | 16                     | 8    | 11   | 0    | 35         | 485        |
| 12:45 PM    | 8                      | 149  | 11   | 0    | 168        | 10                     | 0    | 31   | 0    | 41         | 40                     | 162  | 16   | 0    | 218        | 17                     | 6    | 16   | 0    | 39         | 466        |
| Total       | 31                     | 596  | 67   | 0    | 694        | 37                     | 21   | 135  | 0    | 193        | 146                    | 658  | 78   | 0    | 882        | 82                     | 29   | 51   | 0    | 162        | 1931       |
| 01:00 PM    | 14                     | 160  | 20   | 0    | 194        | 11                     | 4    | 36   | 0    | 51         | 43                     | 164  | 11   | 0    | 218        | 14                     | 4    | 12   | 0    | 30         | 493        |
| 01:15 PM    | 10                     | 147  | 11   | 0    | 168        | 8                      | 13   | 33   | 0    | 54         | 41                     | 198  | 14   | 0    | 253        | 19                     | 5    | 12   | 0    | 36         | 511        |
| 01:30 PM    | 15                     | 142  | 12   | 0    | 169        | 8                      | 3    | 27   | 0    | 38         | 38                     | 158  | 17   | 0    | 213        | 14                     | 9    | 12   | 0    | 35         | 455        |
| 01:45 PM    | 9                      | 159  | 17   | 0    | 185        | 11                     | 6    | 31   | 0    | 48         | 36                     | 193  | 16   | 0    | 245        | 20                     | 10   | 14   | 0    | 44         | 522        |
| Total       | 48                     | 608  | 60   | 0    | 716        | 38                     | 26   | 127  | 0    | 191        | 158                    | 713  | 58   | 0    | 929        | 67                     | 28   | 50   | 0    | 145        | 1981       |
| 02:00 PM    | 11                     | 133  | 12   | 0    | 156        | 10                     | 6    | 32   | 0    | 48         | 42                     | 207  | 23   | 0    | 272        | 26                     | 9    | 7    | 0    | 42         | 518        |
| 02:15 PM    | 18                     | 159  | 16   | 0    | 193        | 15                     | 6    | 34   | 0    | 55         | 63                     | 206  | 24   | 0    | 293        | 19                     | 12   | 20   | 0    | 51         | 592        |
| 02:30 PM    | 12                     | 144  | 15   | 0    | 171        | 6                      | 9    | 31   | 0    | 46         | 62                     | 253  | 30   | 0    | 345        | 13                     | 7    | 14   | 0    | 34         | 596        |
| 02:45 PM    | 3                      | 119  | 11   | 0    | 133        | 6                      | 7    | 25   | 0    | 38         | 52                     | 190  | 31   | 0    | 273        | 13                     | 10   | 17   | 0    | 40         | 484        |
| Total       | 44                     | 555  | 54   | 0    | 653        | 37                     | 28   | 122  | 0    | 187        | 219                    | 856  | 108  | 0    | 1183       | 71                     | 38   | 58   | 0    | 167        | 2190       |
| 03:00 PM    | 15                     | 141  | 16   | 0    | 172        | 5                      | 6    | 26   | 0    | 37         | 82                     | 259  | 35   | 0    | 376        | 15                     | 15   | 18   | 0    | 48         | 633        |
| 03:15 PM    | 20                     | 151  | 25   | 0    | 196        | 10                     | 9    | 28   | 0    | 47         | 67                     | 247  | 26   | 0    | 340        | 19                     | 14   | 12   | 0    | 45         | 628        |
| 03:30 PM    | 13                     | 169  | 18   | 0    | 200        | 11                     | 8    | 29   | 0    | 48         | 84                     | 258  | 35   | 0    | 377        | 14                     | 18   | 25   | 0    | 57         | 682        |
| 03:45 PM    | 18                     | 154  | 17   | 0    | 189        | 14                     | 10   | 37   | 0    | 61         | 84                     | 226  | 40   | 0    | 350        | 19                     | 14   | 18   | 0    | 51         | 651        |
| Total       | 66                     | 615  | 76   | 0    | 757        | 40                     | 33   | 120  | 0    | 193        | 317                    | 990  | 136  | 0    | 1443       | 67                     | 61   | 73   | 0    | 201        | 2594       |
| 04:00 PM    | 17                     | 167  | 22   | 0    | 206        | 12                     | 10   | 29   | 0    | 51         | 108                    | 289  | 30   | 0    | 427        | 14                     | 10   | 22   | 0    | 46         | 730        |
| 04:15 PM    | 15                     | 167  | 28   | 0    | 210        | 11                     | 19   | 27   | 0    | 57         | 87                     | 267  | 29   | 0    | 383        | 16                     | 15   | 36   | 0    | 67         | 717        |
| 04:30 PM    | 15                     | 183  | 14   | 0    | 212        | 14                     | 12   | 37   | 0    | 63         | 90                     | 306  | 53   | 0    | 449        | 23                     | 16   | 26   | 0    | 65         | 789        |
| 04:45 PM    | 12                     | 181  | 21   | 0    | 214        | 18                     | 14   | 40   | 0    | 72         | 97                     | 312  | 34   | 0    | 443        | 20                     | 12   | 19   | 0    | 51         | 780        |
| Total       | 59                     | 698  | 85   | 0    | 842        | 55                     | 55   | 133  | 0    | 243        | 382                    | 1174 | 146  | 0    | 1702       | 73                     | 53   | 103  | 0    | 229        | 3016       |
| 05:00 PM    | 18                     | 160  | 27   | 0    | 205        | 14                     | 15   | 48   | 0    | 77         | 97                     | 318  | 54   | 0    | 469        | 25                     | 12   | 21   | 0    | 58         | 809        |
| 05:15 PM    | 14                     | 184  | 25   | 0    | 223        | 13                     | 21   | 47   | 0    | 81         | 73                     | 296  | 41   | 0    | 410        | 16                     | 19   | 14   | 0    | 49         | 763        |
| 05:30 PM    | 17                     | 193  | 21   | 0    | 231        | 21                     | 19   | 38   | 0    | 78         | 95                     | 329  | 35   | 0    | 459        | 24                     | 14   | 27   | 0    | 65         | 833        |
| 05:45 PM    | 18                     | 158  | 23   | 0    | 199        | 26                     | 9    | 58   | 0    | 93         | 79                     | 299  | 33   | 0    | 411        | 16                     | 16   | 15   | 0    | 47         | 750        |
| Total       | 67                     | 695  | 96   | 0    | 858        | 74                     | 64   | 191  | 0    | 329        | 344                    | 1242 | 163  | 0    | 1749       | 81                     | 61   | 77   | 0    | 219        | 3155       |
| 06:00 PM    | 9                      | 161  | 28   | 0    | 198        | 11                     | 12   | 33   | 0    | 56         | 95                     | 329  | 48   | 0    | 472        | 19                     | 19   | 20   | 0    | 58         | 784        |
| 06:15 PM    | 12                     | 142  | 16   | 0    | 170        | 11                     | 12   | 39   | 0    | 62         | 71                     | 233  | 36   | 0    | 340        | 28                     | 7    | 15   | 0    | 50         | 622        |
| 06:30 PM    | 11                     | 103  | 16   | 0    | 130        | 13                     | 8    | 24   | 0    | 45         | 70                     | 201  | 32   | 0    | 303        | 13                     | 12   | 17   | 0    | 42         | 520        |
| 06:45 PM    | 10                     | 100  | 9    | 0    | 119        | 10                     | 13   | 27   | 0    | 50         | 59                     | 181  | 22   | 0    | 262        | 10                     | 4    | 8    | 0    | 22         | 453        |
| Total       | 42                     | 506  | 69   | 0    | 617        | 45                     | 45   | 123  | 0    | 213        | 295                    | 944  | 138  | 0    | 1377       | 70                     | 42   | 60   | 0    | 172        | 2379       |
| Grand Total | 474                    | 8563 | 747  | 0    | 9784       | 549                    | 402  | 2129 | 0    | 3080       | 2383                   | 9081 | 1045 | 0    | 12509      | 1017                   | 438  | 753  | 0    | 2208       | 27581      |
| Apprch %    | 4.8                    | 87.5 | 7.6  | 0    |            | 17.8                   | 13.1 | 69.1 | 0    |            | 19.1                   | 72.6 | 8.4  | 0    |            | 46.1                   | 19.8 | 34.1 | 0    |            |            |
| Total %     | 1.7                    | 31   | 2.7  | 0    | 35.5       | 2                      | 1.5  | 7.7  | 0    | 11.2       | 8.6                    | 32.9 | 3.8  | 0    | 45.4       | 3.7                    | 1.6  | 2.7  | 0    | 8          |            |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 1-Route 29 and Route 607  
 Site Code :  
 Start Date : 12/6/2017  
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|                                                            | Route 29<br>Southbound |      |      |            | Route 607<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Route 607<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|------------------------|------|------|------------|------------------------|------|------|------------|------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 |                        |      |      |            |                        |      |      |            |                        |      |      |            |                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                        |      |      |            |                        |      |      |            |                        |      |      |            |                        |      |      |            |            |
| 07:00 AM                                                   | 1                      | 299  | 11   | 311        | 12                     | 15   | 94   | 121        | 34                     | 114  | 6    | 154        | 38                     | 10   | 15   | 63         | 649        |
| 07:15 AM                                                   | 0                      | 329  | 18   | 347        | 20                     | 7    | 116  | 143        | 22                     | 142  | 10   | 174        | 48                     | 10   | 19   | 77         | 741        |
| 07:30 AM                                                   | 8                      | 289  | 14   | 311        | 24                     | 6    | 117  | 147        | 24                     | 134  | 9    | 167        | 45                     | 10   | 21   | 76         | 701        |
| 07:45 AM                                                   | 6                      | 276  | 10   | 292        | 14                     | 6    | 80   | 100        | 21                     | 96   | 12   | 129        | 34                     | 13   | 18   | 65         | 586        |
| Total Volume                                               | 15                     | 1193 | 53   | 1261       | 70                     | 34   | 407  | 511        | 101                    | 486  | 37   | 624        | 165                    | 43   | 73   | 281        | 2677       |
| % App. Total                                               | 1.2                    | 94.6 | 4.2  |            | 13.7                   | 6.7  | 79.6 |            | 16.2                   | 77.9 | 5.9  |            | 58.7                   | 15.3 | 26   |            |            |
| PHF                                                        | .469                   | .907 | .736 | .909       | .729                   | .567 | .870 | .869       | .743                   | .856 | .771 | .897       | .859                   | .827 | .869 | .912       | .903       |

|                                                            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Peak Hour for Entire Intersection Begins at 04:45 PM       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 04:45 PM                                                   | 12   | 181  | 21   | 214  | 18   | 14   | 40   | 72   | 97   | 312  | 34   | 443  | 20   | 12   | 19   | 51   | 780  |
| 05:00 PM                                                   | 18   | 160  | 27   | 205  | 14   | 15   | 48   | 77   | 97   | 318  | 54   | 469  | 25   | 12   | 21   | 58   | 809  |
| 05:15 PM                                                   | 14   | 184  | 25   | 223  | 13   | 21   | 47   | 81   | 73   | 296  | 41   | 410  | 16   | 19   | 14   | 49   | 763  |
| 05:30 PM                                                   | 17   | 193  | 21   | 231  | 21   | 19   | 38   | 78   | 95   | 329  | 35   | 459  | 24   | 14   | 27   | 65   | 833  |
| Total Volume                                               | 61   | 718  | 94   | 873  | 66   | 69   | 173  | 308  | 362  | 1255 | 164  | 1781 | 85   | 57   | 81   | 223  | 3185 |
| % App. Total                                               | 7    | 82.2 | 10.8 |      | 21.4 | 22.4 | 56.2 |      | 20.3 | 70.5 | 9.2  |      | 38.1 | 25.6 | 36.3 |      |      |
| PHF                                                        | .847 | .930 | .870 | .945 | .786 | .821 | .901 | .951 | .933 | .954 | .759 | .949 | .850 | .750 | .750 | .858 | .956 |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 1-Route 29 and Route 607  
 Site Code :  
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### Groups Printed- Truck

|             | Route 29<br>Southbound |      |      |      |            | Route 607<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Route 607<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                      | 7    | 4    | 0    | 11         | 1                      | 2    | 0    | 0    | 3          | 3                      | 16   | 0    | 0    | 19         | 0                      | 0    | 2    | 0    | 2          | 35         |
| 07:15 AM    | 0                      | 11   | 0    | 0    | 11         | 1                      | 0    | 1    | 0    | 2          | 3                      | 16   | 0    | 0    | 19         | 0                      | 1    | 1    | 0    | 2          | 34         |
| 07:30 AM    | 1                      | 11   | 0    | 0    | 12         | 1                      | 0    | 2    | 0    | 3          | 0                      | 20   | 0    | 0    | 20         | 0                      | 1    | 0    | 0    | 1          | 36         |
| 07:45 AM    | 0                      | 13   | 4    | 0    | 17         | 1                      | 0    | 2    | 0    | 3          | 2                      | 17   | 0    | 0    | 19         | 1                      | 0    | 2    | 0    | 3          | 42         |
| Total       | 1                      | 42   | 8    | 0    | 51         | 4                      | 2    | 5    | 0    | 11         | 8                      | 69   | 0    | 0    | 77         | 1                      | 2    | 5    | 0    | 8          | 147        |
| 08:00 AM    | 0                      | 11   | 0    | 0    | 11         | 0                      | 0    | 4    | 0    | 4          | 1                      | 11   | 1    | 0    | 13         | 0                      | 1    | 1    | 0    | 2          | 30         |
| 08:15 AM    | 0                      | 19   | 0    | 0    | 19         | 1                      | 0    | 4    | 0    | 5          | 0                      | 11   | 0    | 0    | 11         | 2                      | 0    | 1    | 0    | 3          | 38         |
| 08:30 AM    | 0                      | 15   | 1    | 0    | 16         | 0                      | 0    | 2    | 0    | 2          | 3                      | 17   | 1    | 0    | 21         | 0                      | 0    | 0    | 0    | 0          | 39         |
| 08:45 AM    | 0                      | 10   | 1    | 0    | 11         | 1                      | 0    | 2    | 0    | 3          | 2                      | 7    | 0    | 0    | 9          | 1                      | 0    | 0    | 0    | 1          | 24         |
| Total       | 0                      | 55   | 2    | 0    | 57         | 2                      | 0    | 12   | 0    | 14         | 6                      | 46   | 2    | 0    | 54         | 3                      | 1    | 2    | 0    | 6          | 131        |
| 09:00 AM    | 0                      | 9    | 0    | 0    | 9          | 0                      | 1    | 0    | 0    | 1          | 0                      | 18   | 1    | 0    | 19         | 1                      | 0    | 0    | 0    | 1          | 30         |
| 09:15 AM    | 1                      | 9    | 0    | 0    | 10         | 1                      | 0    | 0    | 0    | 1          | 2                      | 22   | 0    | 0    | 24         | 0                      | 0    | 1    | 0    | 1          | 36         |
| 09:30 AM    | 1                      | 10   | 2    | 0    | 13         | 0                      | 1    | 1    | 0    | 2          | 2                      | 8    | 1    | 0    | 11         | 0                      | 1    | 1    | 0    | 2          | 28         |
| 09:45 AM    | 0                      | 15   | 0    | 0    | 15         | 1                      | 2    | 0    | 0    | 3          | 3                      | 15   | 0    | 0    | 18         | 0                      | 0    | 0    | 0    | 0          | 36         |
| Total       | 2                      | 43   | 2    | 0    | 47         | 2                      | 4    | 1    | 0    | 7          | 7                      | 63   | 2    | 0    | 72         | 1                      | 1    | 2    | 0    | 4          | 130        |
| 10:00 AM    | 0                      | 21   | 2    | 0    | 23         | 0                      | 0    | 0    | 0    | 0          | 4                      | 20   | 0    | 0    | 24         | 0                      | 0    | 0    | 0    | 0          | 47         |
| 10:15 AM    | 0                      | 8    | 0    | 0    | 8          | 1                      | 1    | 3    | 0    | 5          | 1                      | 19   | 2    | 0    | 22         | 2                      | 1    | 0    | 0    | 3          | 38         |
| 10:30 AM    | 0                      | 12   | 0    | 0    | 12         | 0                      | 0    | 2    | 0    | 2          | 2                      | 11   | 0    | 0    | 13         | 0                      | 0    | 2    | 0    | 2          | 29         |
| 10:45 AM    | 0                      | 19   | 0    | 0    | 19         | 2                      | 0    | 0    | 0    | 2          | 1                      | 16   | 1    | 0    | 18         | 1                      | 0    | 1    | 0    | 2          | 41         |
| Total       | 0                      | 60   | 2    | 0    | 62         | 3                      | 1    | 5    | 0    | 9          | 8                      | 66   | 3    | 0    | 77         | 3                      | 1    | 3    | 0    | 7          | 155        |
| 11:00 AM    | 0                      | 14   | 0    | 0    | 14         | 2                      | 0    | 0    | 0    | 2          | 1                      | 11   | 0    | 0    | 12         | 0                      | 0    | 0    | 0    | 0          | 28         |
| 11:15 AM    | 0                      | 13   | 0    | 0    | 13         | 0                      | 0    | 0    | 0    | 0          | 3                      | 9    | 0    | 0    | 12         | 1                      | 0    | 0    | 0    | 1          | 26         |
| 11:30 AM    | 2                      | 12   | 2    | 0    | 16         | 0                      | 0    | 0    | 0    | 0          | 2                      | 10   | 1    | 0    | 13         | 1                      | 1    | 1    | 0    | 3          | 32         |
| 11:45 AM    | 0                      | 19   | 0    | 0    | 19         | 0                      | 2    | 2    | 0    | 4          | 2                      | 15   | 0    | 0    | 17         | 0                      | 0    | 0    | 0    | 0          | 40         |
| Total       | 2                      | 58   | 2    | 0    | 62         | 2                      | 2    | 2    | 0    | 6          | 8                      | 45   | 1    | 0    | 54         | 2                      | 1    | 1    | 0    | 4          | 126        |
| 12:00 PM    | 0                      | 14   | 0    | 0    | 14         | 0                      | 0    | 1    | 0    | 1          | 1                      | 9    | 1    | 0    | 11         | 1                      | 0    | 0    | 0    | 1          | 27         |
| 12:15 PM    | 0                      | 17   | 2    | 0    | 19         | 0                      | 0    | 2    | 0    | 2          | 6                      | 9    | 0    | 0    | 15         | 1                      | 0    | 0    | 0    | 1          | 37         |
| 12:30 PM    | 1                      | 21   | 0    | 0    | 22         | 0                      | 0    | 0    | 0    | 0          | 0                      | 16   | 1    | 0    | 17         | 1                      | 0    | 0    | 0    | 1          | 40         |
| 12:45 PM    | 0                      | 17   | 0    | 0    | 17         | 0                      | 1    | 1    | 0    | 2          | 1                      | 15   | 0    | 0    | 16         | 1                      | 0    | 0    | 0    | 1          | 36         |
| Total       | 1                      | 69   | 2    | 0    | 72         | 0                      | 1    | 4    | 0    | 5          | 8                      | 49   | 2    | 0    | 59         | 4                      | 0    | 0    | 0    | 4          | 140        |
| 01:00 PM    | 0                      | 10   | 0    | 0    | 10         | 1                      | 0    | 0    | 0    | 1          | 1                      | 21   | 1    | 0    | 23         | 0                      | 0    | 0    | 0    | 0          | 34         |
| 01:15 PM    | 0                      | 16   | 0    | 0    | 16         | 0                      | 0    | 1    | 0    | 1          | 1                      | 17   | 0    | 0    | 18         | 0                      | 1    | 1    | 0    | 2          | 37         |
| 01:30 PM    | 1                      | 14   | 0    | 0    | 15         | 1                      | 0    | 1    | 0    | 2          | 2                      | 17   | 1    | 0    | 20         | 0                      | 0    | 3    | 0    | 3          | 40         |
| 01:45 PM    | 0                      | 23   | 0    | 0    | 23         | 0                      | 0    | 1    | 0    | 1          | 1                      | 13   | 0    | 0    | 14         | 0                      | 0    | 1    | 0    | 1          | 39         |
| Total       | 1                      | 63   | 0    | 0    | 64         | 2                      | 0    | 3    | 0    | 5          | 5                      | 68   | 2    | 0    | 75         | 0                      | 1    | 5    | 0    | 6          | 150        |
| 02:00 PM    | 1                      | 12   | 1    | 0    | 14         | 0                      | 0    | 1    | 0    | 1          | 0                      | 10   | 1    | 0    | 11         | 2                      | 0    | 2    | 0    | 4          | 30         |
| 02:15 PM    | 0                      | 16   | 1    | 0    | 17         | 0                      | 0    | 1    | 0    | 1          | 0                      | 10   | 0    | 0    | 10         | 0                      | 0    | 0    | 0    | 0          | 28         |
| 02:30 PM    | 0                      | 16   | 0    | 0    | 16         | 0                      | 0    | 1    | 0    | 1          | 0                      | 13   | 1    | 0    | 14         | 0                      | 0    | 1    | 0    | 1          | 32         |
| 02:45 PM    | 0                      | 12   | 0    | 0    | 12         | 0                      | 0    | 0    | 0    | 0          | 5                      | 15   | 0    | 0    | 20         | 0                      | 0    | 1    | 0    | 1          | 33         |
| Total       | 1                      | 56   | 2    | 0    | 59         | 0                      | 0    | 3    | 0    | 3          | 5                      | 48   | 2    | 0    | 55         | 2                      | 0    | 4    | 0    | 6          | 123        |
| 03:00 PM    | 0                      | 16   | 0    | 0    | 16         | 0                      | 0    | 1    | 0    | 1          | 2                      | 9    | 0    | 0    | 11         | 0                      | 0    | 0    | 0    | 0          | 28         |
| 03:15 PM    | 0                      | 9    | 2    | 0    | 11         | 0                      | 1    | 1    | 0    | 2          | 2                      | 19   | 0    | 0    | 21         | 0                      | 1    | 0    | 0    | 1          | 35         |
| 03:30 PM    | 0                      | 13   | 3    | 0    | 16         | 3                      | 1    | 2    | 0    | 6          | 0                      | 19   | 2    | 0    | 21         | 0                      | 1    | 1    | 0    | 2          | 45         |
| 03:45 PM    | 1                      | 11   | 0    | 0    | 12         | 3                      | 1    | 1    | 0    | 5          | 1                      | 18   | 0    | 0    | 19         | 1                      | 0    | 3    | 0    | 4          | 40         |
| Total       | 1                      | 49   | 5    | 0    | 55         | 6                      | 3    | 5    | 0    | 14         | 5                      | 65   | 2    | 0    | 72         | 1                      | 2    | 4    | 0    | 7          | 148        |
| 04:00 PM    | 2                      | 14   | 2    | 0    | 18         | 0                      | 0    | 1    | 0    | 1          | 0                      | 8    | 0    | 0    | 8          | 1                      | 0    | 1    | 0    | 2          | 29         |
| 04:15 PM    | 0                      | 9    | 0    | 0    | 9          | 0                      | 0    | 0    | 0    | 0          | 1                      | 9    | 0    | 0    | 10         | 1                      | 0    | 0    | 0    | 1          | 20         |
| 04:30 PM    | 1                      | 7    | 0    | 0    | 8          | 0                      | 1    | 1    | 0    | 2          | 4                      | 7    | 0    | 0    | 11         | 1                      | 1    | 0    | 0    | 2          | 23         |
| 04:45 PM    | 0                      | 6    | 0    | 0    | 6          | 1                      | 0    | 1    | 0    | 2          | 1                      | 8    | 0    | 0    | 9          | 0                      | 0    | 0    | 0    | 0          | 17         |
| Total       | 3                      | 36   | 2    | 0    | 41         | 1                      | 1    | 3    | 0    | 5          | 6                      | 32   | 0    | 0    | 38         | 3                      | 1    | 1    | 0    | 5          | 89         |
| 05:00 PM    | 0                      | 3    | 0    | 0    | 3          | 0                      | 0    | 0    | 0    | 0          | 0                      | 14   | 0    | 0    | 14         | 0                      | 0    | 0    | 0    | 0          | 17         |
| 05:15 PM    | 0                      | 3    | 0    | 0    | 3          | 0                      | 0    | 1    | 0    | 1          | 1                      | 3    | 0    | 0    | 4          | 0                      | 0    | 0    | 0    | 0          | 8          |
| 05:30 PM    | 0                      | 7    | 0    | 0    | 7          | 0                      | 0    | 1    | 0    | 1          | 0                      | 10   | 0    | 0    | 10         | 1                      | 0    | 0    | 0    | 1          | 19         |
| 05:45 PM    | 0                      | 6    | 0    | 0    | 6          | 0                      | 0    | 0    | 0    | 0          | 1                      | 5    | 0    | 0    | 6          | 1                      | 0    | 0    | 0    | 1          | 13         |
| Total       | 0                      | 19   | 0    | 0    | 19         | 0                      | 0    | 2    | 0    | 2          | 2                      | 32   | 0    | 0    | 34         | 2                      | 0    | 0    | 0    | 2          | 57         |
| 06:00 PM    | 0                      | 5    | 0    | 0    | 5          | 0                      | 0    | 0    | 0    | 0          | 1                      | 9    | 0    | 0    | 10         | 0                      | 0    | 0    | 0    | 0          | 15         |
| 06:15 PM    | 0                      | 6    | 0    | 0    | 6          | 0                      | 0    | 1    | 0    | 1          | 0                      | 3    | 0    | 0    | 3          | 0                      | 0    | 0    | 0    | 0          | 10         |
| 06:30 PM    | 0                      | 1    | 0    | 0    | 1          | 0                      | 0    | 1    | 0    | 1          | 0                      | 8    | 1    | 0    | 9          | 0                      | 1    | 0    | 0    | 1          | 12         |
| 06:45 PM    | 2                      | 5    | 0    | 0    | 7          | 0                      | 0    | 0    | 0    | 0          | 0                      | 5    | 0    | 0    | 5          | 0                      | 0    | 0    | 0    | 0          | 12         |
| Total       | 2                      | 17   | 0    | 0    | 19         | 0                      | 0    | 2    | 0    | 2          | 1                      | 25   | 1    | 0    | 27         | 0                      | 1    | 0    | 0    | 1          | 49         |
| Grand Total | 14                     | 567  | 27   | 0    | 608        | 22                     | 14   | 47   | 0    | 83         | 69                     | 608  | 17   | 0    | 694        | 22                     | 11   | 27   | 0    | 60         | 1445       |
| Apprch %    | 2.3                    | 93.3 | 4.4  | 0    |            | 26.5                   | 16.9 | 56.6 | 0    |            | 9.9                    | 87.6 | 2.4  | 0    |            | 36.7                   | 18.3 | 45   | 0    |            |            |
| Total %     | 1                      | 39.2 | 1.9  | 0    | 42.1       | 1.5                    | 1    | 3.3  | 0    | 5.7        | 4.8                    | 42.1 | 1.2  | 0    | 48         | 1.5                    | 0.8  | 1.9  | 0    | 4.2        |            |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 1-Route 29 and Route 607  
 Site Code :  
 Start Date : 12/6/2017  
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|                                                            | Route 29<br>Southbound |      |      |            | Route 607<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Route 607<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|------------------------|------|------|------------|------------------------|------|------|------------|------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 |                        |      |      |            |                        |      |      |            |                        |      |      |            |                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 10:00 AM       |                        |      |      |            |                        |      |      |            |                        |      |      |            |                        |      |      |            |            |
| 10:00 AM                                                   | 0                      | 21   | 2    | 23         | 0                      | 0    | 0    | 0          | 4                      | 20   | 0    | 24         | 0                      | 0    | 0    | 0          | 47         |
| 10:15 AM                                                   | 0                      | 8    | 0    | 8          | 1                      | 1    | 3    | 5          | 1                      | 19   | 2    | 22         | 2                      | 1    | 0    | 3          | 38         |
| 10:30 AM                                                   | 0                      | 12   | 0    | 12         | 0                      | 0    | 2    | 2          | 2                      | 11   | 0    | 13         | 0                      | 0    | 2    | 2          | 29         |
| 10:45 AM                                                   | 0                      | 19   | 0    | 19         | 2                      | 0    | 0    | 2          | 1                      | 16   | 1    | 18         | 1                      | 0    | 1    | 2          | 41         |
| Total Volume                                               | 0                      | 60   | 2    | 62         | 3                      | 1    | 5    | 9          | 8                      | 66   | 3    | 77         | 3                      | 1    | 3    | 7          | 155        |
| % App. Total                                               | 0                      | 96.8 | 3.2  |            | 33.3                   | 11.1 | 55.6 |            | 10.4                   | 85.7 | 3.9  |            | 42.9                   | 14.3 | 42.9 |            |            |
| PHF                                                        | .000                   | .714 | .250 | .674       | .375                   | .250 | .417 | .450       | .500                   | .825 | .375 | .802       | .375                   | .250 | .375 | .583       | .824       |

Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 01:00 PM

|              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01:00 PM     | 0    | 10   | 0    | 10   | 1    | 0    | 0    | 1    | 1    | 21   | 1    | 23   | 0    | 0    | 0    | 0    | 34   |
| 01:15 PM     | 0    | 16   | 0    | 16   | 0    | 0    | 1    | 1    | 1    | 17   | 0    | 18   | 0    | 1    | 1    | 2    | 37   |
| 01:30 PM     | 1    | 14   | 0    | 15   | 1    | 0    | 1    | 2    | 2    | 17   | 1    | 20   | 0    | 0    | 3    | 3    | 40   |
| 01:45 PM     | 0    | 23   | 0    | 23   | 0    | 0    | 1    | 1    | 1    | 13   | 0    | 14   | 0    | 0    | 1    | 1    | 39   |
| Total Volume | 1    | 63   | 0    | 64   | 2    | 0    | 3    | 5    | 5    | 68   | 2    | 75   | 0    | 1    | 5    | 6    | 150  |
| % App. Total | 1.6  | 98.4 | 0    |      | 40   | 0    | 60   |      | 6.7  | 90.7 | 2.7  |      | 0    | 16.7 | 83.3 |      |      |
| PHF          | .250 | .685 | .000 | .696 | .500 | .000 | .750 | .625 | .625 | .810 | .500 | .815 | .000 | .250 | .417 | .500 | .938 |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 1-Route 29 and Route 607  
 Site Code :  
 Start Date : 12/6/2017  
 Page No : 1

### Groups Printed- Combined

|             | Route 29<br>Southbound |      |      |      |            | Route 607<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Route 607<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                      | 306  | 15   | 0    | 322        | 13                     | 17   | 94   | 0    | 124        | 37                     | 130  | 6    | 0    | 173        | 38                     | 10   | 17   | 0    | 65         | 684        |
| 07:15 AM    | 0                      | 340  | 18   | 0    | 358        | 21                     | 7    | 117  | 0    | 145        | 25                     | 158  | 10   | 0    | 193        | 48                     | 11   | 20   | 0    | 79         | 775        |
| 07:30 AM    | 9                      | 300  | 14   | 0    | 323        | 25                     | 6    | 119  | 0    | 150        | 24                     | 154  | 9    | 0    | 187        | 45                     | 11   | 21   | 0    | 77         | 737        |
| 07:45 AM    | 6                      | 289  | 14   | 0    | 309        | 15                     | 6    | 82   | 0    | 103        | 23                     | 113  | 12   | 0    | 148        | 35                     | 13   | 20   | 0    | 68         | 628        |
| Total       | 16                     | 1235 | 61   | 0    | 1312       | 74                     | 36   | 412  | 0    | 522        | 109                    | 555  | 37   | 0    | 701        | 166                    | 45   | 78   | 0    | 289        | 2824       |
| 08:00 AM    | 4                      | 272  | 15   | 0    | 291        | 23                     | 5    | 72   | 0    | 100        | 41                     | 151  | 15   | 0    | 207        | 39                     | 5    | 15   | 0    | 59         | 657        |
| 08:15 AM    | 6                      | 319  | 16   | 0    | 341        | 8                      | 11   | 87   | 0    | 106        | 23                     | 112  | 4    | 0    | 139        | 30                     | 6    | 23   | 0    | 59         | 645        |
| 08:30 AM    | 6                      | 255  | 9    | 0    | 270        | 14                     | 4    | 79   | 0    | 97         | 27                     | 154  | 12   | 0    | 193        | 29                     | 3    | 8    | 0    | 40         | 600        |
| 08:45 AM    | 7                      | 231  | 5    | 0    | 243        | 7                      | 5    | 81   | 0    | 93         | 23                     | 125  | 4    | 0    | 152        | 24                     | 4    | 11   | 0    | 39         | 527        |
| Total       | 23                     | 1077 | 45   | 0    | 1145       | 52                     | 25   | 319  | 0    | 396        | 114                    | 542  | 35   | 0    | 691        | 122                    | 18   | 57   | 0    | 197        | 2429       |
| 09:00 AM    | 5                      | 208  | 16   | 0    | 229        | 9                      | 6    | 56   | 0    | 71         | 24                     | 150  | 12   | 0    | 186        | 28                     | 2    | 25   | 0    | 55         | 541        |
| 09:15 AM    | 3                      | 205  | 17   | 0    | 225        | 13                     | 4    | 58   | 0    | 75         | 28                     | 146  | 5    | 0    | 179        | 13                     | 3    | 12   | 0    | 28         | 507        |
| 09:30 AM    | 5                      | 203  | 11   | 0    | 219        | 6                      | 8    | 52   | 0    | 66         | 34                     | 123  | 12   | 0    | 169        | 20                     | 4    | 14   | 0    | 38         | 492        |
| 09:45 AM    | 10                     | 202  | 11   | 0    | 223        | 9                      | 9    | 37   | 0    | 55         | 25                     | 139  | 13   | 0    | 177        | 26                     | 3    | 6    | 0    | 35         | 490        |
| Total       | 23                     | 818  | 55   | 0    | 896        | 37                     | 27   | 203  | 0    | 267        | 111                    | 558  | 42   | 0    | 711        | 87                     | 12   | 57   | 0    | 156        | 2030       |
| 10:00 AM    | 10                     | 196  | 13   | 0    | 219        | 9                      | 2    | 41   | 0    | 52         | 26                     | 107  | 5    | 0    | 138        | 21                     | 9    | 16   | 0    | 46         | 455        |
| 10:15 AM    | 12                     | 194  | 9    | 0    | 215        | 11                     | 5    | 46   | 0    | 62         | 22                     | 153  | 15   | 0    | 190        | 22                     | 5    | 8    | 0    | 35         | 502        |
| 10:30 AM    | 3                      | 200  | 13   | 0    | 216        | 6                      | 6    | 38   | 0    | 50         | 24                     | 115  | 14   | 0    | 153        | 20                     | 4    | 11   | 0    | 35         | 454        |
| 10:45 AM    | 8                      | 168  | 14   | 0    | 190        | 14                     | 7    | 25   | 0    | 46         | 30                     | 146  | 8    | 0    | 184        | 14                     | 2    | 14   | 0    | 30         | 450        |
| Total       | 33                     | 758  | 49   | 0    | 840        | 40                     | 20   | 150  | 0    | 210        | 102                    | 521  | 42   | 0    | 665        | 77                     | 20   | 49   | 0    | 146        | 1861       |
| 11:00 AM    | 5                      | 174  | 16   | 0    | 195        | 7                      | 6    | 28   | 0    | 41         | 27                     | 149  | 22   | 0    | 198        | 13                     | 10   | 14   | 0    | 37         | 471        |
| 11:15 AM    | 5                      | 159  | 11   | 0    | 175        | 4                      | 9    | 37   | 0    | 50         | 31                     | 179  | 18   | 0    | 228        | 18                     | 6    | 9    | 0    | 33         | 486        |
| 11:30 AM    | 11                     | 175  | 9    | 0    | 195        | 12                     | 8    | 31   | 0    | 51         | 32                     | 145  | 16   | 0    | 193        | 15                     | 9    | 20   | 0    | 44         | 483        |
| 11:45 AM    | 6                      | 152  | 10   | 0    | 168        | 10                     | 8    | 23   | 0    | 41         | 33                     | 144  | 14   | 0    | 191        | 18                     | 12   | 10   | 0    | 40         | 440        |
| Total       | 27                     | 660  | 46   | 0    | 733        | 33                     | 31   | 119  | 0    | 183        | 123                    | 617  | 70   | 0    | 810        | 64                     | 37   | 53   | 0    | 154        | 1880       |
| 12:00 PM    | 4                      | 148  | 21   | 0    | 173        | 8                      | 6    | 32   | 0    | 46         | 35                     | 187  | 25   | 0    | 247        | 26                     | 8    | 13   | 0    | 47         | 513        |
| 12:15 PM    | 8                      | 164  | 20   | 0    | 192        | 7                      | 8    | 48   | 0    | 63         | 45                     | 169  | 19   | 0    | 233        | 25                     | 7    | 11   | 0    | 43         | 531        |
| 12:30 PM    | 12                     | 187  | 17   | 0    | 216        | 12                     | 7    | 27   | 0    | 46         | 33                     | 174  | 20   | 0    | 227        | 17                     | 8    | 11   | 0    | 36         | 525        |
| 12:45 PM    | 8                      | 166  | 11   | 0    | 185        | 10                     | 1    | 32   | 0    | 43         | 41                     | 177  | 16   | 0    | 234        | 18                     | 6    | 16   | 0    | 40         | 502        |
| Total       | 32                     | 665  | 69   | 0    | 766        | 37                     | 22   | 139  | 0    | 198        | 154                    | 707  | 80   | 0    | 941        | 86                     | 29   | 51   | 0    | 166        | 2071       |
| 01:00 PM    | 14                     | 170  | 20   | 0    | 204        | 12                     | 4    | 36   | 0    | 52         | 44                     | 185  | 12   | 0    | 241        | 14                     | 4    | 12   | 0    | 30         | 527        |
| 01:15 PM    | 10                     | 163  | 11   | 0    | 184        | 8                      | 13   | 34   | 0    | 55         | 42                     | 215  | 14   | 0    | 271        | 19                     | 6    | 13   | 0    | 38         | 548        |
| 01:30 PM    | 16                     | 156  | 12   | 0    | 184        | 9                      | 3    | 28   | 0    | 40         | 40                     | 175  | 18   | 0    | 233        | 14                     | 9    | 15   | 0    | 38         | 495        |
| 01:45 PM    | 9                      | 182  | 17   | 0    | 208        | 11                     | 6    | 32   | 0    | 49         | 37                     | 206  | 16   | 0    | 259        | 20                     | 10   | 15   | 0    | 45         | 561        |
| Total       | 49                     | 671  | 60   | 0    | 780        | 40                     | 26   | 130  | 0    | 196        | 163                    | 781  | 60   | 0    | 1004       | 67                     | 29   | 55   | 0    | 151        | 2131       |
| 02:00 PM    | 12                     | 145  | 13   | 0    | 170        | 10                     | 6    | 33   | 0    | 49         | 42                     | 217  | 24   | 0    | 283        | 28                     | 9    | 9    | 0    | 46         | 548        |
| 02:15 PM    | 18                     | 175  | 17   | 0    | 210        | 15                     | 6    | 35   | 0    | 56         | 63                     | 216  | 24   | 0    | 303        | 19                     | 12   | 20   | 0    | 51         | 620        |
| 02:30 PM    | 12                     | 160  | 15   | 0    | 187        | 6                      | 9    | 32   | 0    | 47         | 62                     | 266  | 31   | 0    | 359        | 13                     | 7    | 15   | 0    | 35         | 628        |
| 02:45 PM    | 3                      | 131  | 11   | 0    | 145        | 6                      | 7    | 25   | 0    | 38         | 57                     | 205  | 31   | 0    | 293        | 13                     | 10   | 18   | 0    | 41         | 517        |
| Total       | 45                     | 611  | 56   | 0    | 712        | 37                     | 28   | 125  | 0    | 190        | 224                    | 904  | 110  | 0    | 1238       | 73                     | 38   | 62   | 0    | 173        | 2313       |
| 03:00 PM    | 15                     | 157  | 16   | 0    | 188        | 5                      | 6    | 27   | 0    | 38         | 84                     | 268  | 35   | 0    | 387        | 15                     | 15   | 18   | 0    | 48         | 661        |
| 03:15 PM    | 20                     | 160  | 27   | 0    | 207        | 10                     | 10   | 29   | 0    | 49         | 69                     | 266  | 26   | 0    | 361        | 19                     | 15   | 12   | 0    | 46         | 663        |
| 03:30 PM    | 13                     | 182  | 21   | 0    | 216        | 14                     | 9    | 31   | 0    | 54         | 84                     | 277  | 37   | 0    | 398        | 14                     | 19   | 26   | 0    | 59         | 727        |
| 03:45 PM    | 19                     | 165  | 17   | 0    | 201        | 17                     | 11   | 38   | 0    | 66         | 85                     | 244  | 40   | 0    | 369        | 20                     | 14   | 21   | 0    | 55         | 691        |
| Total       | 67                     | 664  | 81   | 0    | 812        | 46                     | 36   | 125  | 0    | 207        | 322                    | 1055 | 138  | 0    | 1515       | 68                     | 63   | 77   | 0    | 208        | 2742       |
| 04:00 PM    | 19                     | 181  | 24   | 0    | 224        | 12                     | 10   | 30   | 0    | 52         | 108                    | 297  | 30   | 0    | 435        | 15                     | 10   | 23   | 0    | 48         | 759        |
| 04:15 PM    | 15                     | 176  | 28   | 0    | 219        | 11                     | 19   | 27   | 0    | 57         | 88                     | 276  | 29   | 0    | 393        | 17                     | 15   | 36   | 0    | 68         | 737        |
| 04:30 PM    | 16                     | 190  | 14   | 0    | 220        | 14                     | 13   | 38   | 0    | 65         | 94                     | 313  | 53   | 0    | 460        | 24                     | 17   | 26   | 0    | 67         | 812        |
| 04:45 PM    | 12                     | 187  | 21   | 0    | 220        | 19                     | 14   | 41   | 0    | 74         | 98                     | 320  | 34   | 0    | 452        | 20                     | 12   | 19   | 0    | 51         | 797        |
| Total       | 62                     | 734  | 87   | 0    | 883        | 56                     | 56   | 136  | 0    | 248        | 388                    | 1206 | 146  | 0    | 1740       | 76                     | 54   | 104  | 0    | 234        | 3105       |
| 05:00 PM    | 18                     | 163  | 27   | 0    | 208        | 14                     | 15   | 48   | 0    | 77         | 97                     | 332  | 54   | 0    | 483        | 25                     | 12   | 21   | 0    | 58         | 826        |
| 05:15 PM    | 14                     | 187  | 25   | 0    | 226        | 13                     | 21   | 48   | 0    | 82         | 74                     | 299  | 41   | 0    | 414        | 16                     | 19   | 14   | 0    | 49         | 771        |
| 05:30 PM    | 17                     | 200  | 21   | 0    | 238        | 21                     | 19   | 39   | 0    | 79         | 95                     | 339  | 35   | 0    | 469        | 25                     | 14   | 27   | 0    | 66         | 852        |
| 05:45 PM    | 18                     | 164  | 23   | 0    | 205        | 26                     | 9    | 58   | 0    | 93         | 80                     | 304  | 33   | 0    | 417        | 17                     | 16   | 15   | 0    | 48         | 763        |
| Total       | 67                     | 714  | 96   | 0    | 877        | 74                     | 64   | 193  | 0    | 331        | 346                    | 1274 | 163  | 0    | 1783       | 83                     | 61   | 77   | 0    | 221        | 3212       |
| 06:00 PM    | 9                      | 166  | 28   | 0    | 203        | 11                     | 12   | 33   | 0    | 56         | 96                     | 338  | 48   | 0    | 482        | 19                     | 19   | 20   | 0    | 58         | 799        |
| 06:15 PM    | 12                     | 148  | 16   | 0    | 176        | 11                     | 12   | 40   | 0    | 63         | 71                     | 236  | 36   | 0    | 343        | 28                     | 7    | 15   | 0    | 50         | 632        |
| 06:30 PM    | 11                     | 104  | 16   | 0    | 131        | 13                     | 8    | 25   | 0    | 46         | 70                     | 209  | 33   | 0    | 312        | 13                     | 13   | 17   | 0    | 43         | 532        |
| 06:45 PM    | 12                     | 105  | 9    | 0    | 126        | 10                     | 13   | 27   | 0    | 50         | 59                     | 186  | 22   | 0    | 267        | 10                     | 4    | 8    | 0    | 22         | 465        |
| Total       | 44                     | 523  | 69   | 0    | 636        | 45                     | 45   | 125  | 0    | 215        | 296                    | 969  | 139  | 0    | 1404       | 70                     | 43   | 60   | 0    | 173        | 2428       |
| Grand Total | 488                    | 9130 | 774  | 0    | 10392      | 571                    | 416  | 2176 | 0    | 3163       | 2452                   | 9689 | 1062 | 0    | 13203      | 1039                   | 449  | 780  | 0    | 2268       | 29026      |
| Apprch %    | 4.7                    | 87.9 | 7.4  | 0    |            | 18.1                   | 13.2 | 68.8 | 0    |            | 18.6                   | 73.4 | 8    | 0    |            | 45.8                   | 19.8 | 34.4 | 0    |            |            |
| Total %     | 1.7                    | 31.5 | 2.7  | 0    | 35.8       | 2                      | 1.4  | 7.5  | 0    | 10.9       | 8.4                    | 33.4 | 3.7  | 0    | 45.5       | 3.6                    | 1.5  | 2.7  | 0    | 7.8        |            |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 1-Route 29 and Route 607  
 Site Code :  
 Start Date : 12/6/2017  
 Page No : 2

|                                                            | Route 29<br>Southbound |            |           |            | Route 607<br>Westbound |      |            |            | Route 29<br>Northbound |            |           |            | Route 607<br>Eastbound |           |           |            |            |
|------------------------------------------------------------|------------------------|------------|-----------|------------|------------------------|------|------------|------------|------------------------|------------|-----------|------------|------------------------|-----------|-----------|------------|------------|
| Start Time                                                 | Right                  | Thru       | Left      | App. Total | Right                  | Thru | Left       | App. Total | Right                  | Thru       | Left      | App. Total | Right                  | Thru      | Left      | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 |                        |            |           |            |                        |      |            |            |                        |            |           |            |                        |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                        |            |           |            |                        |      |            |            |                        |            |           |            |                        |           |           |            |            |
| 07:00 AM                                                   | 1                      | 306        | 15        | 322        | 13                     | 17   | 94         | 124        | 37                     | 130        | 6         | 173        | 38                     | 10        | 17        | 65         | 684        |
| 07:15 AM                                                   | 0                      | <b>340</b> | <b>18</b> | <b>358</b> | 21                     | 7    | 117        | 145        | 25                     | <b>158</b> | 10        | <b>193</b> | <b>48</b>              | 11        | 20        | <b>79</b>  | <b>775</b> |
| 07:30 AM                                                   | <b>9</b>               | 300        | 14        | 323        | <b>25</b>              | 6    | <b>119</b> | <b>150</b> | 24                     | 154        | 9         | 187        | 45                     | 11        | <b>21</b> | 77         | 737        |
| 07:45 AM                                                   | 6                      | 289        | 14        | 309        | 15                     | 6    | 82         | 103        | 23                     | 113        | <b>12</b> | 148        | 35                     | <b>13</b> | 20        | 68         | 628        |
| Total Volume                                               | 16                     | 1235       | 61        | 1312       | 74                     | 36   | 412        | 522        | 109                    | 555        | 37        | 701        | 166                    | 45        | 78        | 289        | 2824       |
| % App. Total                                               | 1.2                    | 94.1       | 4.6       |            | 14.2                   | 6.9  | 78.9       |            | 15.5                   | 79.2       | 5.3       |            | 57.4                   | 15.6      | 27        |            |            |
| PHF                                                        | .444                   | .908       | .847      | .916       | .740                   | .529 | .866       | .870       | .736                   | .878       | .771      | .908       | .865                   | .865      | .929      | .915       | .911       |

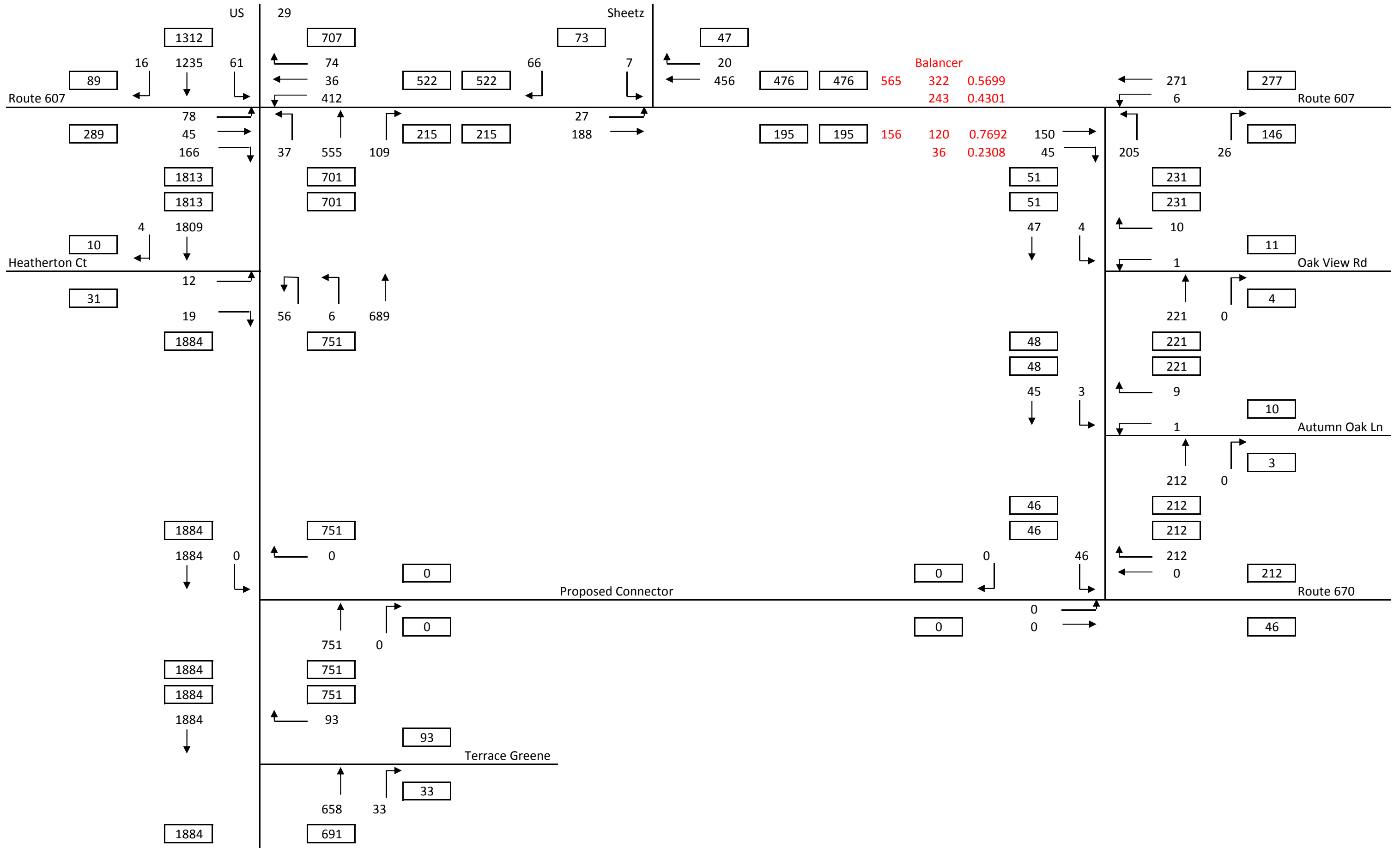
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

|              |           |            |           |            |           |           |           |           |           |            |           |            |           |           |           |           |            |
|--------------|-----------|------------|-----------|------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|------------|-----------|-----------|-----------|-----------|------------|
| 04:45 PM     | 12        | 187        | 21        | 220        | 19        | 14        | 41        | 74        | <b>98</b> | 320        | 34        | 452        | 20        | 12        | 19        | 51        | 797        |
| 05:00 PM     | <b>18</b> | 163        | <b>27</b> | 208        | 14        | 15        | <b>48</b> | 77        | 97        | 332        | <b>54</b> | <b>483</b> | <b>25</b> | 12        | 21        | 58        | 826        |
| 05:15 PM     | 14        | 187        | 25        | 226        | 13        | <b>21</b> | 48        | <b>82</b> | 74        | 299        | 41        | 414        | 16        | <b>19</b> | 14        | 49        | 771        |
| 05:30 PM     | 17        | <b>200</b> | 21        | <b>238</b> | <b>21</b> | 19        | 39        | 79        | 95        | <b>339</b> | 35        | 469        | 25        | 14        | <b>27</b> | <b>66</b> | <b>852</b> |
| Total Volume | 61        | 737        | 94        | 892        | 67        | 69        | 176       | 312       | 364       | 1290       | 164       | 1818       | 86        | 57        | 81        | 224       | 3246       |
| % App. Total | 6.8       | 82.6       | 10.5      |            | 21.5      | 22.1      | 56.4      |           | 20        | 71         | 9         |            | 38.4      | 25.4      | 36.2      |           |            |
| PHF          | .847      | .921       | .870      | .937       | .798      | .821      | .917      | .951      | .929      | .951       | .759      | .941       | .860      | .750      | .750      | .848      | .952       |

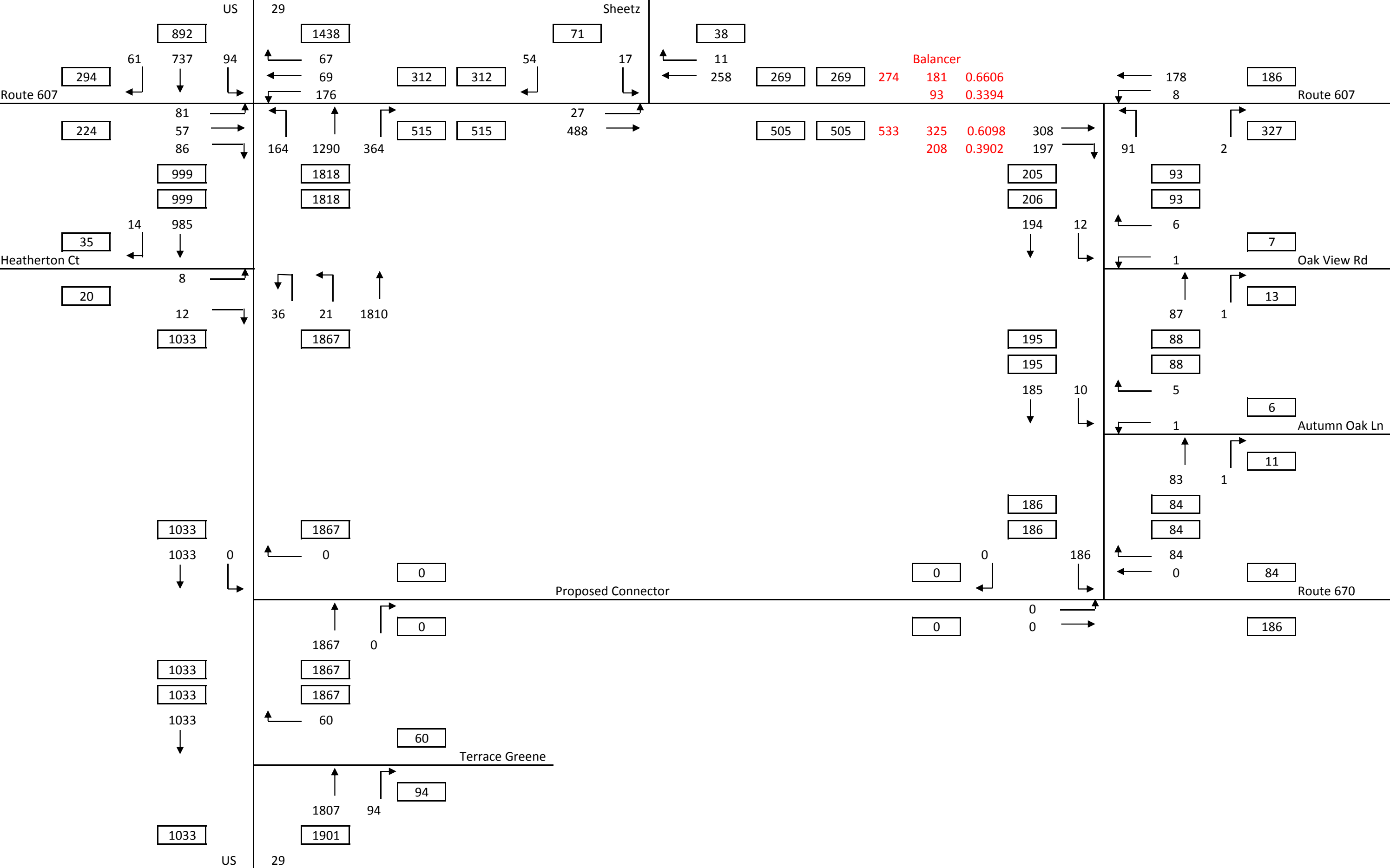
## Route 29 - 607 - 670 Connector Project

### 2017 Existing Conditions AM Volumes



Route 29 - 607 - 670 Connector Project

2017 Existing Conditions PM Volumes



**Peggy Malone & Associates, Inc.**  
(888) 247-8602

File Name : 1-\_US 29 (Seminole Trail) & Terrace Greene Circle AM  
Site Code :  
Start Date : 10/8/2020  
Page No : 1

**Groups Printed- Cars**

|             | <b>US 29<br/>Southbound</b> |      |      |      |            | <b>Terrance Greene Circle<br/>Westbound</b> |      |      |      |            | <b>US 29<br/>Northbound</b> |      |      |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |      |            |            |
|-------------|-----------------------------|------|------|------|------------|---------------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|----------------------------------------|------|------|------|------------|------------|
| Start Time  | Right                       | Thru | Left | Peds | App. Total | Right                                       | Thru | Left | Peds | App. Total | Right                       | Thru | Left | Peds | App. Total | Right                                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 3                           | 359  | 0    | 0    | 362        | 24                                          | 0    | 0    | 0    | 24         | 0                           | 114  | 0    | 0    | 114        | 0                                      | 0    | 0    | 0    | 0          | 500        |
| 07:15 AM    | 0                           | 395  | 0    | 0    | 395        | 23                                          | 0    | 0    | 0    | 23         | 1                           | 132  | 0    | 0    | 133        | 0                                      | 0    | 0    | 0    | 0          | 551        |
| 07:30 AM    | 1                           | 405  | 0    | 0    | 406        | 15                                          | 0    | 0    | 0    | 15         | 1                           | 154  | 0    | 0    | 155        | 0                                      | 0    | 0    | 0    | 0          | 576        |
| 07:45 AM    | 1                           | 358  | 0    | 0    | 359        | 18                                          | 0    | 0    | 0    | 18         | 5                           | 164  | 0    | 0    | 169        | 1                                      | 0    | 0    | 0    | 1          | 547        |
| Total       | 5                           | 1517 | 0    | 0    | 1522       | 80                                          | 0    | 0    | 0    | 80         | 7                           | 564  | 0    | 0    | 571        | 1                                      | 0    | 0    | 0    | 1          | 2174       |
| 08:00 AM    | 1                           | 348  | 0    | 0    | 349        | 17                                          | 0    | 0    | 0    | 17         | 4                           | 142  | 0    | 0    | 146        | 1                                      | 0    | 0    | 0    | 1          | 513        |
| 08:15 AM    | 0                           | 315  | 0    | 0    | 315        | 7                                           | 0    | 0    | 1    | 8          | 1                           | 153  | 0    | 0    | 154        | 0                                      | 0    | 0    | 0    | 0          | 477        |
| 08:30 AM    | 0                           | 308  | 0    | 0    | 308        | 13                                          | 0    | 0    | 0    | 13         | 8                           | 137  | 0    | 0    | 145        | 1                                      | 0    | 0    | 0    | 1          | 467        |
| 08:45 AM    | 1                           | 230  | 0    | 0    | 231        | 9                                           | 0    | 0    | 0    | 9          | 3                           | 158  | 0    | 0    | 161        | 1                                      | 0    | 0    | 0    | 1          | 402        |
| Total       | 2                           | 1201 | 0    | 0    | 1203       | 46                                          | 0    | 0    | 1    | 47         | 16                          | 590  | 0    | 0    | 606        | 3                                      | 0    | 0    | 0    | 3          | 1859       |
| Grand Total | 7                           | 2718 | 0    | 0    | 2725       | 126                                         | 0    | 0    | 1    | 127        | 23                          | 1154 | 0    | 0    | 1177       | 4                                      | 0    | 0    | 0    | 4          | 4033       |
| Apprch %    | 0.3                         | 99.7 | 0    | 0    |            | 99.2                                        | 0    | 0    | 0.8  |            | 2                           | 98   | 0    | 0    |            | 100                                    | 0    | 0    | 0    |            |            |
| Total %     | 0.2                         | 67.4 | 0    | 0    | 67.6       | 3.1                                         | 0    | 0    | 0    | 3.1        | 0.6                         | 28.6 | 0    | 0    | 29.2       | 0.1                                    | 0    | 0    | 0    | 0.1        |            |

|                                                            | <b>US 29<br/>Southbound</b> |      |      |            | <b>Terrance Greene Circle<br/>Westbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |      |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |            |            |
|------------------------------------------------------------|-----------------------------|------|------|------------|---------------------------------------------|------|------|------------|-----------------------------|------|------|------------|----------------------------------------|------|------|------------|------------|
| Start Time                                                 | Right                       | Thru | Left | App. Total | Right                                       | Thru | Left | App. Total | Right                       | Thru | Left | App. Total | Right                                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                             |      |      |            |                                             |      |      |            |                             |      |      |            |                                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                             |      |      |            |                                             |      |      |            |                             |      |      |            |                                        |      |      |            |            |
| 07:15 AM                                                   | 0                           | 395  | 0    | 395        | 23                                          | 0    | 0    | 23         | 1                           | 132  | 0    | 133        | 0                                      | 0    | 0    | 0          | 551        |
| 07:30 AM                                                   | 1                           | 405  | 0    | 406        | 15                                          | 0    | 0    | 15         | 1                           | 154  | 0    | 155        | 0                                      | 0    | 0    | 0          | 576        |
| 07:45 AM                                                   | 1                           | 358  | 0    | 359        | 18                                          | 0    | 0    | 18         | 5                           | 164  | 0    | 169        | 1                                      | 0    | 0    | 1          | 547        |
| 08:00 AM                                                   | 1                           | 348  | 0    | 349        | 17                                          | 0    | 0    | 17         | 4                           | 142  | 0    | 146        | 1                                      | 0    | 0    | 1          | 513        |
| Total Volume                                               | 3                           | 1506 | 0    | 1509       | 73                                          | 0    | 0    | 73         | 11                          | 592  | 0    | 603        | 2                                      | 0    | 0    | 2          | 2187       |
| % App. Total                                               | 0.2                         | 99.8 | 0    |            | 100                                         | 0    | 0    |            | 1.8                         | 98.2 | 0    |            | 100                                    | 0    | 0    |            |            |
| PHF                                                        | .750                        | .930 | .000 | .929       | .793                                        | .000 | .000 | .793       | .550                        | .902 | .000 | .892       | .500                                   | .000 | .000 | .500       | .949       |

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**Groups Printed- Trucks**

|             | <b>US 29<br/>Southbound</b> |      |      |      |            | <b>Terrance Greene Circle<br/>Westbound</b> |      |      |      |            | <b>US 29<br/>Northbound</b> |      |      |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |      |            |            |
|-------------|-----------------------------|------|------|------|------------|---------------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|----------------------------------------|------|------|------|------------|------------|
| Start Time  | Right                       | Thru | Left | Peds | App. Total | Right                                       | Thru | Left | Peds | App. Total | Right                       | Thru | Left | Peds | App. Total | Right                                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                           | 16   | 0    | 0    | 16         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 18   | 0    | 0    | 18         | 0                                      | 0    | 0    | 0    | 0          | 34         |
| 07:15 AM    | 0                           | 23   | 0    | 0    | 23         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 10   | 0    | 0    | 10         | 0                                      | 0    | 0    | 0    | 0          | 33         |
| 07:30 AM    | 0                           | 14   | 0    | 0    | 14         | 2                                           | 0    | 0    | 0    | 2          | 2                           | 8    | 0    | 0    | 10         | 0                                      | 0    | 0    | 0    | 0          | 26         |
| 07:45 AM    | 1                           | 21   | 0    | 0    | 22         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 21   | 0    | 0    | 21         | 0                                      | 0    | 0    | 0    | 0          | 43         |
| Total       | 1                           | 74   | 0    | 0    | 75         | 2                                           | 0    | 0    | 0    | 2          | 2                           | 57   | 0    | 0    | 59         | 0                                      | 0    | 0    | 0    | 0          | 136        |
| 08:00 AM    | 0                           | 22   | 0    | 0    | 22         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 22   | 0    | 0    | 22         | 1                                      | 0    | 0    | 0    | 1          | 45         |
| 08:15 AM    | 1                           | 19   | 0    | 0    | 20         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 13   | 0    | 0    | 13         | 1                                      | 0    | 0    | 0    | 1          | 34         |
| 08:30 AM    | 1                           | 20   | 0    | 0    | 21         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 10   | 0    | 0    | 10         | 0                                      | 0    | 0    | 0    | 0          | 31         |
| 08:45 AM    | 2                           | 14   | 0    | 0    | 16         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 12   | 0    | 0    | 12         | 0                                      | 0    | 0    | 0    | 0          | 28         |
| Total       | 4                           | 75   | 0    | 0    | 79         | 0                                           | 0    | 0    | 0    | 0          | 0                           | 57   | 0    | 0    | 57         | 2                                      | 0    | 0    | 0    | 2          | 138        |
| Grand Total | 5                           | 149  | 0    | 0    | 154        | 2                                           | 0    | 0    | 0    | 2          | 2                           | 114  | 0    | 0    | 116        | 2                                      | 0    | 0    | 0    | 2          | 274        |
| Apprch %    | 3.2                         | 96.8 | 0    | 0    |            | 100                                         | 0    | 0    | 0    |            | 1.7                         | 98.3 | 0    | 0    |            | 100                                    | 0    | 0    | 0    |            |            |
| Total %     | 1.8                         | 54.4 | 0    | 0    | 56.2       | 0.7                                         | 0    | 0    | 0    | 0.7        | 0.7                         | 41.6 | 0    | 0    | 42.3       | 0.7                                    | 0    | 0    | 0    | 0.7        |            |

|                                                            | <b>US 29<br/>Southbound</b> |      |      |            | <b>Terrance Greene Circle<br/>Westbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |      |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |            |            |
|------------------------------------------------------------|-----------------------------|------|------|------------|---------------------------------------------|------|------|------------|-----------------------------|------|------|------------|----------------------------------------|------|------|------------|------------|
| Start Time                                                 | Right                       | Thru | Left | App. Total | Right                                       | Thru | Left | App. Total | Right                       | Thru | Left | App. Total | Right                                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                             |      |      |            |                                             |      |      |            |                             |      |      |            |                                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM       |                             |      |      |            |                                             |      |      |            |                             |      |      |            |                                        |      |      |            |            |
| 07:45 AM                                                   | 1                           | 21   | 0    | 22         | 0                                           | 0    | 0    | 0          | 0                           | 21   | 0    | 21         | 0                                      | 0    | 0    | 0          | 43         |
| 08:00 AM                                                   | 0                           | 22   | 0    | 22         | 0                                           | 0    | 0    | 0          | 0                           | 22   | 0    | 22         | 1                                      | 0    | 0    | 1          | 45         |
| 08:15 AM                                                   | 1                           | 19   | 0    | 20         | 0                                           | 0    | 0    | 0          | 0                           | 13   | 0    | 13         | 1                                      | 0    | 0    | 1          | 34         |
| 08:30 AM                                                   | 1                           | 20   | 0    | 21         | 0                                           | 0    | 0    | 0          | 0                           | 10   | 0    | 10         | 0                                      | 0    | 0    | 0          | 31         |
| Total Volume                                               | 3                           | 82   | 0    | 85         | 0                                           | 0    | 0    | 0          | 0                           | 66   | 0    | 66         | 2                                      | 0    | 0    | 2          | 153        |
| % App. Total                                               | 3.5                         | 96.5 | 0    |            | 0                                           | 0    | 0    |            | 0                           | 100  | 0    |            | 100                                    | 0    | 0    |            |            |
| PHF                                                        | .750                        | .932 | .000 | .966       | .000                                        | .000 | .000 | .000       | .000                        | .750 | .000 | .750       | .500                                   | .000 | .000 | .500       | .850       |

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**Groups Printed- Combined**

|             | <b>US 29<br/>Southbound</b> |      |      |      |            | <b>Terrace Greene Circle<br/>Westbound</b> |      |      |      |            | <b>US 29<br/>Northbound</b> |      |      |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |      |            |            |
|-------------|-----------------------------|------|------|------|------------|--------------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|----------------------------------------|------|------|------|------------|------------|
| Start Time  | Right                       | Thru | Left | Peds | App. Total | Right                                      | Thru | Left | Peds | App. Total | Right                       | Thru | Left | Peds | App. Total | Right                                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 3                           | 375  | 0    | 0    | 378        | 24                                         | 0    | 0    | 0    | 24         | 0                           | 132  | 0    | 0    | 132        | 0                                      | 0    | 0    | 0    | 0          | 534        |
| 07:15 AM    | 0                           | 418  | 0    | 0    | 418        | 23                                         | 0    | 0    | 0    | 23         | 1                           | 142  | 0    | 0    | 143        | 0                                      | 0    | 0    | 0    | 0          | 584        |
| 07:30 AM    | 1                           | 419  | 0    | 0    | 420        | 17                                         | 0    | 0    | 0    | 17         | 3                           | 162  | 0    | 0    | 165        | 0                                      | 0    | 0    | 0    | 0          | 602        |
| 07:45 AM    | 2                           | 379  | 0    | 0    | 381        | 18                                         | 0    | 0    | 0    | 18         | 5                           | 185  | 0    | 0    | 190        | 1                                      | 0    | 0    | 0    | 1          | 590        |
| Total       | 6                           | 1591 | 0    | 0    | 1597       | 82                                         | 0    | 0    | 0    | 82         | 9                           | 621  | 0    | 0    | 630        | 1                                      | 0    | 0    | 0    | 1          | 2310       |
| 08:00 AM    | 1                           | 370  | 0    | 0    | 371        | 17                                         | 0    | 0    | 0    | 17         | 4                           | 164  | 0    | 0    | 168        | 2                                      | 0    | 0    | 0    | 2          | 558        |
| 08:15 AM    | 1                           | 334  | 0    | 0    | 335        | 7                                          | 0    | 0    | 1    | 8          | 1                           | 166  | 0    | 0    | 167        | 1                                      | 0    | 0    | 0    | 1          | 511        |
| 08:30 AM    | 1                           | 328  | 0    | 0    | 329        | 13                                         | 0    | 0    | 0    | 13         | 8                           | 147  | 0    | 0    | 155        | 1                                      | 0    | 0    | 0    | 1          | 498        |
| 08:45 AM    | 3                           | 244  | 0    | 0    | 247        | 9                                          | 0    | 0    | 0    | 9          | 3                           | 170  | 0    | 0    | 173        | 1                                      | 0    | 0    | 0    | 1          | 430        |
| Total       | 6                           | 1276 | 0    | 0    | 1282       | 46                                         | 0    | 0    | 1    | 47         | 16                          | 647  | 0    | 0    | 663        | 5                                      | 0    | 0    | 0    | 5          | 1997       |
| Grand Total | 12                          | 2867 | 0    | 0    | 2879       | 128                                        | 0    | 0    | 1    | 129        | 25                          | 1268 | 0    | 0    | 1293       | 6                                      | 0    | 0    | 0    | 6          | 4307       |
| Apprch %    | 0.4                         | 99.6 | 0    | 0    |            | 99.2                                       | 0    | 0    | 0.8  |            | 1.9                         | 98.1 | 0    | 0    |            | 100                                    | 0    | 0    | 0    |            |            |
| Total %     | 0.3                         | 66.6 | 0    | 0    | 66.8       | 3                                          | 0    | 0    | 0    | 3          | 0.6                         | 29.4 | 0    | 0    | 30         | 0.1                                    | 0    | 0    | 0    | 0.1        |            |

|                                                            | <b>US 29<br/>Southbound</b> |            |      |            | <b>Terrace Greene Circle<br/>Westbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |            |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |            |            |
|------------------------------------------------------------|-----------------------------|------------|------|------------|--------------------------------------------|------|------|------------|-----------------------------|------------|------|------------|----------------------------------------|------|------|------------|------------|
| Start Time                                                 | Right                       | Thru       | Left | App. Total | Right                                      | Thru | Left | App. Total | Right                       | Thru       | Left | App. Total | Right                                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                             |            |      |            |                                            |      |      |            |                             |            |      |            |                                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                             |            |      |            |                                            |      |      |            |                             |            |      |            |                                        |      |      |            |            |
| 07:15 AM                                                   | 0                           | 418        | 0    | 418        | <b>23</b>                                  | 0    | 0    | <b>23</b>  | 1                           | 142        | 0    | 143        | 0                                      | 0    | 0    | 0          | 584        |
| 07:30 AM                                                   | 1                           | <b>419</b> | 0    | <b>420</b> | 17                                         | 0    | 0    | 17         | 3                           | 162        | 0    | 165        | 0                                      | 0    | 0    | 0          | <b>602</b> |
| 07:45 AM                                                   | <b>2</b>                    | 379        | 0    | 381        | 18                                         | 0    | 0    | 18         | <b>5</b>                    | <b>185</b> | 0    | <b>190</b> | 1                                      | 0    | 0    | 1          | 590        |
| 08:00 AM                                                   | 1                           | 370        | 0    | 371        | 17                                         | 0    | 0    | 17         | 4                           | 164        | 0    | 168        | <b>2</b>                               | 0    | 0    | <b>2</b>   | 558        |
| Total Volume                                               | 4                           | 1586       | 0    | 1590       | 75                                         | 0    | 0    | 75         | 13                          | 653        | 0    | 666        | 3                                      | 0    | 0    | 3          | 2334       |
| % App. Total                                               | 0.3                         | 99.7       | 0    |            | 100                                        | 0    | 0    |            | 2                           | 98         | 0    |            | 100                                    | 0    | 0    |            |            |
| PHF                                                        | .500                        | .946       | .000 | .946       | .815                                       | .000 | .000 | .815       | .650                        | .882       | .000 | .876       | .375                                   | .000 | .000 | .375       | .969       |

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File Name : 1-\_US 29 (Seminole Trail) & Terrace Greene Circle PM  
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**Groups Printed- Cars**

|             | <b>US 29<br/>Southbound</b> |      |      |      |            | <b>Terrace Greene Circle<br/>Westbound</b> |      |      |      |            | <b>US 29<br/>Northbound</b> |      |      |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |      |            |            |
|-------------|-----------------------------|------|------|------|------------|--------------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|----------------------------------------|------|------|------|------------|------------|
| Start Time  | Right                       | Thru | Left | Peds | App. Total | Right                                      | Thru | Left | Peds | App. Total | Right                       | Thru | Left | Peds | App. Total | Right                                  | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                           | 204  | 0    | 0    | 204        | 10                                         | 0    | 0    | 0    | 10         | 10                          | 336  | 0    | 0    | 346        | 2                                      | 0    | 0    | 0    | 2          | 562        |
| 04:15 PM    | 0                           | 232  | 0    | 0    | 232        | 10                                         | 0    | 0    | 0    | 10         | 10                          | 306  | 0    | 0    | 316        | 1                                      | 0    | 0    | 0    | 1          | 559        |
| 04:30 PM    | 1                           | 260  | 0    | 0    | 261        | 18                                         | 0    | 0    | 0    | 18         | 6                           | 266  | 0    | 0    | 272        | 4                                      | 0    | 0    | 0    | 4          | 555        |
| 04:45 PM    | 0                           | 241  | 0    | 0    | 241        | 16                                         | 0    | 0    | 0    | 16         | 9                           | 311  | 0    | 0    | 320        | 0                                      | 0    | 0    | 0    | 0          | 577        |
| Total       | 1                           | 937  | 0    | 0    | 938        | 54                                         | 0    | 0    | 0    | 54         | 35                          | 1219 | 0    | 0    | 1254       | 7                                      | 0    | 0    | 0    | 7          | 2253       |
| 05:00 PM    | 0                           | 244  | 0    | 0    | 244        | 13                                         | 0    | 0    | 0    | 13         | 21                          | 292  | 0    | 0    | 313        | 0                                      | 0    | 0    | 0    | 0          | 570        |
| 05:15 PM    | 0                           | 229  | 0    | 0    | 229        | 9                                          | 0    | 0    | 0    | 9          | 26                          | 412  | 0    | 0    | 438        | 0                                      | 0    | 0    | 0    | 0          | 676        |
| 05:30 PM    | 0                           | 209  | 0    | 0    | 209        | 17                                         | 0    | 0    | 0    | 17         | 30                          | 443  | 0    | 0    | 473        | 0                                      | 0    | 0    | 0    | 0          | 699        |
| 05:45 PM    | 0                           | 255  | 0    | 0    | 255        | 18                                         | 0    | 0    | 0    | 18         | 31                          | 459  | 0    | 0    | 490        | 0                                      | 0    | 0    | 0    | 0          | 763        |
| Total       | 0                           | 937  | 0    | 0    | 937        | 57                                         | 0    | 0    | 0    | 57         | 108                         | 1606 | 0    | 0    | 1714       | 0                                      | 0    | 0    | 0    | 0          | 2708       |
| Grand Total | 1                           | 1874 | 0    | 0    | 1875       | 111                                        | 0    | 0    | 0    | 111        | 143                         | 2825 | 0    | 0    | 2968       | 7                                      | 0    | 0    | 0    | 7          | 4961       |
| Apprch %    | 0.1                         | 99.9 | 0    | 0    |            | 100                                        | 0    | 0    | 0    |            | 4.8                         | 95.2 | 0    | 0    |            | 100                                    | 0    | 0    | 0    |            |            |
| Total %     | 0                           | 37.8 | 0    | 0    | 37.8       | 2.2                                        | 0    | 0    | 0    | 2.2        | 2.9                         | 56.9 | 0    | 0    | 59.8       | 0.1                                    | 0    | 0    | 0    | 0.1        |            |

|                                                            | <b>US 29<br/>Southbound</b> |            |      |            | <b>Terrace Greene Circle<br/>Westbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |            |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |            |            |
|------------------------------------------------------------|-----------------------------|------------|------|------------|--------------------------------------------|------|------|------------|-----------------------------|------------|------|------------|----------------------------------------|------|------|------------|------------|
| Start Time                                                 | Right                       | Thru       | Left | App. Total | Right                                      | Thru | Left | App. Total | Right                       | Thru       | Left | App. Total | Right                                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                             |            |      |            |                                            |      |      |            |                             |            |      |            |                                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 05:00 PM       |                             |            |      |            |                                            |      |      |            |                             |            |      |            |                                        |      |      |            |            |
| 05:00 PM                                                   | 0                           | 244        | 0    | 244        | 13                                         | 0    | 0    | 13         | 21                          | 292        | 0    | 313        | 0                                      | 0    | 0    | 0          | 570        |
| 05:15 PM                                                   | 0                           | 229        | 0    | 229        | 9                                          | 0    | 0    | 9          | 26                          | 412        | 0    | 438        | 0                                      | 0    | 0    | 0          | 676        |
| 05:30 PM                                                   | 0                           | 209        | 0    | 209        | 17                                         | 0    | 0    | 17         | 30                          | 443        | 0    | 473        | 0                                      | 0    | 0    | 0          | 699        |
| 05:45 PM                                                   | 0                           | <b>255</b> | 0    | <b>255</b> | <b>18</b>                                  | 0    | 0    | <b>18</b>  | <b>31</b>                   | <b>459</b> | 0    | <b>490</b> | 0                                      | 0    | 0    | 0          | <b>763</b> |
| Total Volume                                               | 0                           | 937        | 0    | 937        | 57                                         | 0    | 0    | 57         | 108                         | 1606       | 0    | 1714       | 0                                      | 0    | 0    | 0          | 2708       |
| % App. Total                                               | 0                           | 100        | 0    |            | 100                                        | 0    | 0    |            | 6.3                         | 93.7       | 0    |            | 0                                      | 0    | 0    |            |            |
| PHF                                                        | .000                        | .919       | .000 | .919       | .792                                       | .000 | .000 | .792       | .871                        | .875       | .000 | .874       | .000                                   | .000 | .000 | .000       | .887       |

**Peggy Malone & Associates, Inc.**  
(888) 247-8602

File Name : 1-\_US 29 (Seminole Trail) & Terrace Greene Circle PM  
Site Code :  
Start Date : 10/8/2020  
Page No : 1

**Groups Printed- Trucks**

|             | US 29<br>Southbound |      |      |      |            | Terrance Greene Circle<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Business Ent/Exit<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------------------|------|------|------|------------|---------------------|------|------|------|------------|--------------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                               | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                          | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 16   | 0    | 0    | 16         | 1                                   | 0    | 0    | 0    | 1          | 0                   | 17   | 0    | 0    | 17         | 0                              | 0    | 0    | 0    | 0          | 34         |
| 04:15 PM    | 0                   | 8    | 0    | 0    | 8          | 0                                   | 0    | 0    | 0    | 0          | 0                   | 10   | 0    | 0    | 10         | 1                              | 0    | 0    | 0    | 1          | 19         |
| 04:30 PM    | 0                   | 8    | 0    | 0    | 8          | 1                                   | 0    | 0    | 0    | 1          | 0                   | 10   | 0    | 0    | 10         | 0                              | 0    | 0    | 0    | 0          | 19         |
| 04:45 PM    | 0                   | 8    | 0    | 0    | 8          | 0                                   | 0    | 0    | 0    | 0          | 0                   | 8    | 0    | 0    | 8          | 0                              | 0    | 0    | 0    | 0          | 16         |
| Total       | 0                   | 40   | 0    | 0    | 40         | 2                                   | 0    | 0    | 0    | 2          | 0                   | 45   | 0    | 0    | 45         | 1                              | 0    | 0    | 0    | 1          | 88         |
| 05:00 PM    | 0                   | 6    | 0    | 0    | 6          | 0                                   | 0    | 0    | 0    | 0          | 0                   | 6    | 0    | 0    | 6          | 0                              | 0    | 0    | 0    | 0          | 12         |
| 05:15 PM    | 0                   | 6    | 0    | 0    | 6          | 0                                   | 0    | 0    | 0    | 0          | 0                   | 14   | 0    | 0    | 14         | 0                              | 0    | 0    | 0    | 0          | 20         |
| 05:30 PM    | 0                   | 8    | 0    | 0    | 8          | 0                                   | 0    | 0    | 0    | 0          | 0                   | 18   | 0    | 0    | 18         | 0                              | 0    | 0    | 0    | 0          | 26         |
| 05:45 PM    | 0                   | 6    | 0    | 0    | 6          | 0                                   | 0    | 0    | 0    | 0          | 0                   | 6    | 0    | 0    | 6          | 0                              | 0    | 0    | 0    | 0          | 12         |
| Total       | 0                   | 26   | 0    | 0    | 26         | 0                                   | 0    | 0    | 0    | 0          | 0                   | 44   | 0    | 0    | 44         | 0                              | 0    | 0    | 0    | 0          | 70         |
| Grand Total | 0                   | 66   | 0    | 0    | 66         | 2                                   | 0    | 0    | 0    | 2          | 0                   | 89   | 0    | 0    | 89         | 1                              | 0    | 0    | 0    | 1          | 158        |
| Apprch %    | 0                   | 100  | 0    | 0    |            | 100                                 | 0    | 0    | 0    |            | 0                   | 100  | 0    | 0    |            | 100                            | 0    | 0    | 0    |            |            |
| Total %     | 0                   | 41.8 | 0    | 0    | 41.8       | 1.3                                 | 0    | 0    | 0    | 1.3        | 0                   | 56.3 | 0    | 0    | 56.3       | 0.6                            | 0    | 0    | 0    | 0.6        |            |

|                                                            | US 29<br>Southbound |      |      |            | Terrance Greene Circle<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Business Ent/Exit<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------------------|------|------|------------|---------------------|------|------|------------|--------------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                               | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                          | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                                     |      |      |            |                     |      |      |            |                                |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                                     |      |      |            |                     |      |      |            |                                |      |      |            |            |
| 04:00 PM                                                   | 0                   | 16   | 0    | 16         | 1                                   | 0    | 0    | 1          | 0                   | 17   | 0    | 17         | 0                              | 0    | 0    | 0          | 34         |
| 04:15 PM                                                   | 0                   | 8    | 0    | 8          | 0                                   | 0    | 0    | 0          | 0                   | 10   | 0    | 10         | 1                              | 0    | 0    | 1          | 19         |
| 04:30 PM                                                   | 0                   | 8    | 0    | 8          | 1                                   | 0    | 0    | 1          | 0                   | 10   | 0    | 10         | 0                              | 0    | 0    | 0          | 19         |
| 04:45 PM                                                   | 0                   | 8    | 0    | 8          | 0                                   | 0    | 0    | 0          | 0                   | 8    | 0    | 8          | 0                              | 0    | 0    | 0          | 16         |
| Total Volume                                               | 0                   | 40   | 0    | 40         | 2                                   | 0    | 0    | 2          | 0                   | 45   | 0    | 45         | 1                              | 0    | 0    | 1          | 88         |
| % App. Total                                               | 0                   | 100  | 0    |            | 100                                 | 0    | 0    |            | 0                   | 100  | 0    |            | 100                            | 0    | 0    |            |            |
| PHF                                                        | .000                | .625 | .000 | .625       | .500                                | .000 | .000 | .500       | .000                | .662 | .000 | .662       | .250                           | .000 | .000 | .250       | .647       |

**Peggy Malone & Associates, Inc.**  
(888) 247-8602

File Name : 1-\_US 29 (Seminole Trail) & Terrace Greene Circle PM  
Site Code :  
Start Date : 10/8/2020  
Page No : 1

**Groups Printed- Combined**

|             | <b>US 29<br/>Southbound</b> |      |      |      |            | <b>Terrance Greene Circle<br/>Westbound</b> |      |      |      |            | <b>US 29<br/>Northbound</b> |      |      |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |      |            |            |
|-------------|-----------------------------|------|------|------|------------|---------------------------------------------|------|------|------|------------|-----------------------------|------|------|------|------------|----------------------------------------|------|------|------|------------|------------|
| Start Time  | Right                       | Thru | Left | Peds | App. Total | Right                                       | Thru | Left | Peds | App. Total | Right                       | Thru | Left | Peds | App. Total | Right                                  | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                           | 220  | 0    | 0    | 220        | 11                                          | 0    | 0    | 0    | 11         | 10                          | 353  | 0    | 0    | 363        | 2                                      | 0    | 0    | 0    | 2          | 596        |
| 04:15 PM    | 0                           | 240  | 0    | 0    | 240        | 10                                          | 0    | 0    | 0    | 10         | 10                          | 316  | 0    | 0    | 326        | 2                                      | 0    | 0    | 0    | 2          | 578        |
| 04:30 PM    | 1                           | 268  | 0    | 0    | 269        | 19                                          | 0    | 0    | 0    | 19         | 6                           | 276  | 0    | 0    | 282        | 4                                      | 0    | 0    | 0    | 4          | 574        |
| 04:45 PM    | 0                           | 249  | 0    | 0    | 249        | 16                                          | 0    | 0    | 0    | 16         | 9                           | 319  | 0    | 0    | 328        | 0                                      | 0    | 0    | 0    | 0          | 593        |
| Total       | 1                           | 977  | 0    | 0    | 978        | 56                                          | 0    | 0    | 0    | 56         | 35                          | 1264 | 0    | 0    | 1299       | 8                                      | 0    | 0    | 0    | 8          | 2341       |
| 05:00 PM    | 0                           | 250  | 0    | 0    | 250        | 13                                          | 0    | 0    | 0    | 13         | 21                          | 298  | 0    | 0    | 319        | 0                                      | 0    | 0    | 0    | 0          | 582        |
| 05:15 PM    | 0                           | 235  | 0    | 0    | 235        | 9                                           | 0    | 0    | 0    | 9          | 26                          | 426  | 0    | 0    | 452        | 0                                      | 0    | 0    | 0    | 0          | 696        |
| 05:30 PM    | 0                           | 217  | 0    | 0    | 217        | 17                                          | 0    | 0    | 0    | 17         | 30                          | 461  | 0    | 0    | 491        | 0                                      | 0    | 0    | 0    | 0          | 725        |
| 05:45 PM    | 0                           | 261  | 0    | 0    | 261        | 18                                          | 0    | 0    | 0    | 18         | 31                          | 465  | 0    | 0    | 496        | 0                                      | 0    | 0    | 0    | 0          | 775        |
| Total       | 0                           | 963  | 0    | 0    | 963        | 57                                          | 0    | 0    | 0    | 57         | 108                         | 1650 | 0    | 0    | 1758       | 0                                      | 0    | 0    | 0    | 0          | 2778       |
| Grand Total | 1                           | 1940 | 0    | 0    | 1941       | 113                                         | 0    | 0    | 0    | 113        | 143                         | 2914 | 0    | 0    | 3057       | 8                                      | 0    | 0    | 0    | 8          | 5119       |
| Apprch %    | 0.1                         | 99.9 | 0    | 0    |            | 100                                         | 0    | 0    | 0    |            | 4.7                         | 95.3 | 0    | 0    |            | 100                                    | 0    | 0    | 0    |            |            |
| Total %     | 0                           | 37.9 | 0    | 0    | 37.9       | 2.2                                         | 0    | 0    | 0    | 2.2        | 2.8                         | 56.9 | 0    | 0    | 59.7       | 0.2                                    | 0    | 0    | 0    | 0.2        |            |

|                                                            | <b>US 29<br/>Southbound</b> |            |      |            | <b>Terrance Greene Circle<br/>Westbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |            |      |            | <b>Business Ent/Exit<br/>Eastbound</b> |      |      |            |            |
|------------------------------------------------------------|-----------------------------|------------|------|------------|---------------------------------------------|------|------|------------|-----------------------------|------------|------|------------|----------------------------------------|------|------|------------|------------|
| Start Time                                                 | Right                       | Thru       | Left | App. Total | Right                                       | Thru | Left | App. Total | Right                       | Thru       | Left | App. Total | Right                                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                             |            |      |            |                                             |      |      |            |                             |            |      |            |                                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 05:00 PM       |                             |            |      |            |                                             |      |      |            |                             |            |      |            |                                        |      |      |            |            |
| 05:00 PM                                                   | 0                           | 250        | 0    | 250        | 13                                          | 0    | 0    | 13         | 21                          | 298        | 0    | 319        | 0                                      | 0    | 0    | 0          | 582        |
| 05:15 PM                                                   | 0                           | 235        | 0    | 235        | 9                                           | 0    | 0    | 9          | 26                          | 426        | 0    | 452        | 0                                      | 0    | 0    | 0          | 696        |
| 05:30 PM                                                   | 0                           | 217        | 0    | 217        | 17                                          | 0    | 0    | 17         | 30                          | 461        | 0    | 491        | 0                                      | 0    | 0    | 0          | 725        |
| 05:45 PM                                                   | 0                           | <b>261</b> | 0    | <b>261</b> | <b>18</b>                                   | 0    | 0    | <b>18</b>  | <b>31</b>                   | <b>465</b> | 0    | <b>496</b> | 0                                      | 0    | 0    | 0          | <b>775</b> |
| Total Volume                                               | 0                           | 963        | 0    | 963        | 57                                          | 0    | 0    | 57         | 108                         | 1650       | 0    | 1758       | 0                                      | 0    | 0    | 0          | 2778       |
| % App. Total                                               | 0                           | 100        | 0    |            | 100                                         | 0    | 0    |            | 6.1                         | 93.9       | 0    |            | 0                                      | 0    | 0    |            |            |
| PHF                                                        | .000                        | .922       | .000 | .922       | .792                                        | .000 | .000 | .792       | .871                        | .887       | .000 | .886       | .000                                   | .000 | .000 | .000       | .896       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 1\_US 29 & Keleigh Ln AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Keleigh Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 407  | 0    | 0    | 407        | 0                     | 0    | 0    | 0    | 0          | 0                   | 143  | 1    | 0    | 144        | 11                      | 0    | 2    | 0    | 13         | 564        |
| 07:15 AM    | 2                   | 445  | 0    | 0    | 447        | 0                     | 0    | 0    | 0    | 0          | 0                   | 124  | 3    | 0    | 127        | 7                       | 0    | 4    | 0    | 11         | 585        |
| 07:30 AM    | 0                   | 440  | 0    | 0    | 440        | 0                     | 0    | 0    | 0    | 0          | 0                   | 154  | 1    | 0    | 155        | 13                      | 0    | 1    | 0    | 14         | 609        |
| 07:45 AM    | 1                   | 354  | 0    | 0    | 355        | 0                     | 0    | 0    | 0    | 0          | 0                   | 149  | 1    | 0    | 150        | 7                       | 0    | 5    | 0    | 12         | 517        |
| Total       | 3                   | 1646 | 0    | 0    | 1649       | 0                     | 0    | 0    | 0    | 0          | 0                   | 570  | 6    | 0    | 576        | 38                      | 0    | 12   | 0    | 50         | 2275       |
| 08:00 AM    | 5                   | 385  | 1    | 0    | 391        | 0                     | 0    | 0    | 0    | 0          | 0                   | 167  | 3    | 0    | 170        | 5                       | 0    | 3    | 0    | 8          | 569        |
| 08:15 AM    | 3                   | 356  | 0    | 0    | 359        | 0                     | 0    | 0    | 0    | 0          | 0                   | 153  | 0    | 0    | 153        | 4                       | 0    | 0    | 0    | 4          | 516        |
| 08:30 AM    | 2                   | 357  | 0    | 0    | 359        | 0                     | 0    | 0    | 0    | 0          | 0                   | 151  | 3    | 0    | 154        | 5                       | 0    | 2    | 0    | 7          | 520        |
| 08:45 AM    | 1                   | 289  | 1    | 0    | 291        | 0                     | 0    | 0    | 0    | 0          | 0                   | 165  | 1    | 0    | 166        | 8                       | 0    | 0    | 0    | 8          | 465        |
| Total       | 11                  | 1387 | 2    | 0    | 1400       | 0                     | 0    | 0    | 0    | 0          | 0                   | 636  | 7    | 0    | 643        | 22                      | 0    | 5    | 0    | 27         | 2070       |
| Grand Total | 14                  | 3033 | 2    | 0    | 3049       | 0                     | 0    | 0    | 0    | 0          | 0                   | 1206 | 13   | 0    | 1219       | 60                      | 0    | 17   | 0    | 77         | 4345       |
| Apprch %    | 0.5                 | 99.5 | 0.1  | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 98.9 | 1.1  | 0    |            | 77.9                    | 0    | 22.1 | 0    |            |            |
| Total %     | 0.3                 | 69.8 | 0    | 0    | 70.2       | 0                     | 0    | 0    | 0    | 0          | 0                   | 27.8 | 0.3  | 0    | 28.1       | 1.4                     | 0    | 0.4  | 0    | 1.8        |            |

|                                                            | US 29<br>Southbound |            |          |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |          |            | Keleigh Ln<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-----------------------|------|------|------------|---------------------|------------|----------|------------|-------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru       | Left     | App. Total | Right                   | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |            |          |            |                       |      |      |            |                     |            |          |            |                         |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |            |          |            |                       |      |      |            |                     |            |          |            |                         |      |          |            |            |
| 07:15 AM                                                   | 2                   | <b>445</b> | 0        | <b>447</b> | 0                     | 0    | 0    | 0          | 0                   | 124        | <b>3</b> | 127        | 7                       | 0    | 4        | 11         | 585        |
| 07:30 AM                                                   | 0                   | 440        | 0        | 440        | 0                     | 0    | 0    | 0          | 0                   | 154        | 1        | 155        | <b>13</b>               | 0    | 1        | <b>14</b>  | <b>609</b> |
| 07:45 AM                                                   | 1                   | 354        | 0        | 355        | 0                     | 0    | 0    | 0          | 0                   | 149        | 1        | 150        | 7                       | 0    | <b>5</b> | 12         | 517        |
| 08:00 AM                                                   | <b>5</b>            | 385        | <b>1</b> | 391        | 0                     | 0    | 0    | 0          | 0                   | <b>167</b> | 3        | <b>170</b> | 5                       | 0    | 3        | 8          | 569        |
| Total Volume                                               | 8                   | 1624       | 1        | 1633       | 0                     | 0    | 0    | 0          | 0                   | 594        | 8        | 602        | 32                      | 0    | 13       | 45         | 2280       |
| % App. Total                                               | 0.5                 | 99.4       | 0.1      |            | 0                     | 0    | 0    |            | 0                   | 98.7       | 1.3      |            | 71.1                    | 0    | 28.9     |            |            |
| PHF                                                        | .400                | .912       | .250     | .913       | .000                  | .000 | .000 | .000       | .000                | .889       | .667     | .885       | .615                    | .000 | .650     | .804       | .936       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 1\_US 29 & Keleigh Ln AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Keleigh Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                   | 15   | 0    | 0    | 16         | 0                     | 0    | 0    | 0    | 0          | 0                   | 16   | 0    | 0    | 16         | 1                       | 0    | 0    | 0    | 1          | 33         |
| 07:15 AM    | 1                   | 16   | 0    | 0    | 17         | 0                     | 0    | 0    | 0    | 0          | 0                   | 25   | 0    | 0    | 25         | 1                       | 0    | 0    | 0    | 1          | 43         |
| 07:30 AM    | 0                   | 17   | 0    | 0    | 17         | 0                     | 0    | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 0                       | 0    | 0    | 0    | 0          | 32         |
| 07:45 AM    | 0                   | 28   | 0    | 0    | 28         | 0                     | 0    | 0    | 0    | 0          | 0                   | 16   | 1    | 0    | 17         | 0                       | 0    | 0    | 0    | 0          | 45         |
| Total       | 2                   | 76   | 0    | 0    | 78         | 0                     | 0    | 0    | 0    | 0          | 0                   | 72   | 1    | 0    | 73         | 2                       | 0    | 0    | 0    | 2          | 153        |
| 08:00 AM    | 0                   | 17   | 0    | 0    | 17         | 0                     | 0    | 0    | 0    | 0          | 0                   | 20   | 0    | 0    | 20         | 0                       | 0    | 0    | 0    | 0          | 37         |
| 08:15 AM    | 0                   | 16   | 0    | 0    | 16         | 0                     | 0    | 0    | 0    | 0          | 0                   | 19   | 0    | 0    | 19         | 0                       | 0    | 0    | 0    | 0          | 35         |
| 08:30 AM    | 0                   | 18   | 0    | 0    | 18         | 0                     | 0    | 0    | 0    | 0          | 0                   | 16   | 0    | 0    | 16         | 0                       | 0    | 0    | 0    | 0          | 34         |
| 08:45 AM    | 0                   | 24   | 0    | 0    | 24         | 0                     | 0    | 0    | 0    | 0          | 0                   | 16   | 0    | 0    | 16         | 0                       | 0    | 0    | 0    | 0          | 40         |
| Total       | 0                   | 75   | 0    | 0    | 75         | 0                     | 0    | 0    | 0    | 0          | 0                   | 71   | 0    | 0    | 71         | 0                       | 0    | 0    | 0    | 0          | 146        |
| Grand Total | 2                   | 151  | 0    | 0    | 153        | 0                     | 0    | 0    | 0    | 0          | 0                   | 143  | 1    | 0    | 144        | 2                       | 0    | 0    | 0    | 2          | 299        |
| Apprch %    | 1.3                 | 98.7 | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 99.3 | 0.7  | 0    |            | 100                     | 0    | 0    | 0    |            |            |
| Total %     | 0.7                 | 50.5 | 0    | 0    | 51.2       | 0                     | 0    | 0    | 0    | 0          | 0                   | 47.8 | 0.3  | 0    | 48.2       | 0.7                     | 0    | 0    | 0    | 0.7        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Keleigh Ln<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 07:15 AM                                                   | 1                   | 16   | 0    | 17         | 0                     | 0    | 0    | 0          | 0                   | 25   | 0    | 25         | 1                       | 0    | 0    | 1          | 43         |
| 07:30 AM                                                   | 0                   | 17   | 0    | 17         | 0                     | 0    | 0    | 0          | 0                   | 15   | 0    | 15         | 0                       | 0    | 0    | 0          | 32         |
| 07:45 AM                                                   | 0                   | 28   | 0    | 28         | 0                     | 0    | 0    | 0          | 0                   | 16   | 1    | 17         | 0                       | 0    | 0    | 0          | 45         |
| 08:00 AM                                                   | 0                   | 17   | 0    | 17         | 0                     | 0    | 0    | 0          | 0                   | 20   | 0    | 20         | 0                       | 0    | 0    | 0          | 37         |
| Total Volume                                               | 1                   | 78   | 0    | 79         | 0                     | 0    | 0    | 0          | 0                   | 76   | 1    | 77         | 1                       | 0    | 0    | 1          | 157        |
| % App. Total                                               | 1.3                 | 98.7 | 0    |            | 0                     | 0    | 0    |            | 0                   | 98.7 | 1.3  |            | 100                     | 0    | 0    |            |            |
| PHF                                                        | .250                | .696 | .000 | .705       | .000                  | .000 | .000 | .000       | .000                | .760 | .250 | .770       | .250                    | .000 | .000 | .250       | .872       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 1\_US 29 & Keleigh Ln AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Keleigh Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                   | 422  | 0    | 0    | 423        | 0                     | 0    | 0    | 0    | 0          | 0                   | 159  | 1    | 0    | 160        | 12                      | 0    | 2    | 0    | 14         | 597        |
| 07:15 AM    | 3                   | 461  | 0    | 0    | 464        | 0                     | 0    | 0    | 0    | 0          | 0                   | 149  | 3    | 0    | 152        | 8                       | 0    | 4    | 0    | 12         | 628        |
| 07:30 AM    | 0                   | 457  | 0    | 0    | 457        | 0                     | 0    | 0    | 0    | 0          | 0                   | 169  | 1    | 0    | 170        | 13                      | 0    | 1    | 0    | 14         | 641        |
| 07:45 AM    | 1                   | 382  | 0    | 0    | 383        | 0                     | 0    | 0    | 0    | 0          | 0                   | 165  | 2    | 0    | 167        | 7                       | 0    | 5    | 0    | 12         | 562        |
| Total       | 5                   | 1722 | 0    | 0    | 1727       | 0                     | 0    | 0    | 0    | 0          | 0                   | 642  | 7    | 0    | 649        | 40                      | 0    | 12   | 0    | 52         | 2428       |
| 08:00 AM    | 5                   | 402  | 1    | 0    | 408        | 0                     | 0    | 0    | 0    | 0          | 0                   | 187  | 3    | 0    | 190        | 5                       | 0    | 3    | 0    | 8          | 606        |
| 08:15 AM    | 3                   | 372  | 0    | 0    | 375        | 0                     | 0    | 0    | 0    | 0          | 0                   | 172  | 0    | 0    | 172        | 4                       | 0    | 0    | 0    | 4          | 551        |
| 08:30 AM    | 2                   | 375  | 0    | 0    | 377        | 0                     | 0    | 0    | 0    | 0          | 0                   | 167  | 3    | 0    | 170        | 5                       | 0    | 2    | 0    | 7          | 554        |
| 08:45 AM    | 1                   | 313  | 1    | 0    | 315        | 0                     | 0    | 0    | 0    | 0          | 0                   | 181  | 1    | 0    | 182        | 8                       | 0    | 0    | 0    | 8          | 505        |
| Total       | 11                  | 1462 | 2    | 0    | 1475       | 0                     | 0    | 0    | 0    | 0          | 0                   | 707  | 7    | 0    | 714        | 22                      | 0    | 5    | 0    | 27         | 2216       |
| Grand Total | 16                  | 3184 | 2    | 0    | 3202       | 0                     | 0    | 0    | 0    | 0          | 0                   | 1349 | 14   | 0    | 1363       | 62                      | 0    | 17   | 0    | 79         | 4644       |
| Apprch %    | 0.5                 | 99.4 | 0.1  | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 99   | 1    | 0    |            | 78.5                    | 0    | 21.5 | 0    |            |            |
| Total %     | 0.3                 | 68.6 | 0    | 0    | 68.9       | 0                     | 0    | 0    | 0    | 0          | 0                   | 29   | 0.3  | 0    | 29.3       | 1.3                     | 0    | 0.4  | 0    | 1.7        |            |

|                                                            | US 29<br>Southbound |            |          |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |          |            | Keleigh Ln<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-----------------------|------|------|------------|---------------------|------------|----------|------------|-------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru       | Left     | App. Total | Right                   | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |            |          |            |                       |      |      |            |                     |            |          |            |                         |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |            |          |            |                       |      |      |            |                     |            |          |            |                         |      |          |            |            |
| 07:15 AM                                                   | 3                   | <b>461</b> | 0        | <b>464</b> | 0                     | 0    | 0    | 0          | 0                   | 149        | <b>3</b> | 152        | 8                       | 0    | 4        | 12         | 628        |
| 07:30 AM                                                   | 0                   | 457        | 0        | 457        | 0                     | 0    | 0    | 0          | 0                   | 169        | 1        | 170        | <b>13</b>               | 0    | 1        | <b>14</b>  | <b>641</b> |
| 07:45 AM                                                   | 1                   | 382        | 0        | 383        | 0                     | 0    | 0    | 0          | 0                   | 165        | 2        | 167        | 7                       | 0    | <b>5</b> | 12         | 562        |
| 08:00 AM                                                   | <b>5</b>            | 402        | <b>1</b> | 408        | 0                     | 0    | 0    | 0          | 0                   | <b>187</b> | 3        | <b>190</b> | 5                       | 0    | 3        | 8          | 606        |
| Total Volume                                               | 9                   | 1702       | 1        | 1712       | 0                     | 0    | 0    | 0          | 0                   | 670        | 9        | 679        | 33                      | 0    | 13       | 46         | 2437       |
| % App. Total                                               | 0.5                 | 99.4       | 0.1      |            | 0                     | 0    | 0    |            | 0                   | 98.7       | 1.3      |            | 71.7                    | 0    | 28.3     |            |            |
| PHF                                                        | .450                | .923       | .250     | .922       | .000                  | .000 | .000 | .000       | .000                | .896       | .750     | .893       | .635                    | .000 | .650     | .821       | .950       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 1\_US 29 & Keleigh Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Keleigh Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 1                   | 211  | 0    | 0    | 212        | 0                     | 0    | 0    | 0    | 0          | 0                   | 369  | 6    | 0    | 375        | 2                       | 0    | 2    | 0    | 4          | 591        |
| 04:15 PM    | 0                   | 199  | 1    | 0    | 200        | 0                     | 0    | 0    | 0    | 0          | 0                   | 419  | 3    | 0    | 422        | 2                       | 0    | 2    | 0    | 4          | 626        |
| 04:30 PM    | 2                   | 265  | 1    | 0    | 268        | 0                     | 0    | 0    | 0    | 0          | 0                   | 430  | 6    | 0    | 436        | 3                       | 0    | 4    | 0    | 7          | 711        |
| 04:45 PM    | 3                   | 218  | 2    | 0    | 223        | 0                     | 0    | 0    | 0    | 0          | 0                   | 445  | 4    | 0    | 449        | 2                       | 0    | 1    | 0    | 3          | 675        |
| Total       | 6                   | 893  | 4    | 0    | 903        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1663 | 19   | 0    | 1682       | 9                       | 0    | 9    | 0    | 18         | 2603       |
| 05:00 PM    | 8                   | 223  | 0    | 0    | 231        | 0                     | 0    | 0    | 0    | 0          | 0                   | 445  | 5    | 0    | 450        | 4                       | 0    | 4    | 0    | 8          | 689        |
| 05:15 PM    | 4                   | 205  | 0    | 0    | 209        | 0                     | 0    | 0    | 0    | 0          | 0                   | 442  | 11   | 0    | 453        | 1                       | 0    | 2    | 0    | 3          | 665        |
| 05:30 PM    | 1                   | 225  | 1    | 0    | 227        | 0                     | 0    | 0    | 0    | 0          | 0                   | 452  | 10   | 0    | 462        | 6                       | 0    | 5    | 0    | 11         | 700        |
| 05:45 PM    | 6                   | 206  | 0    | 0    | 212        | 0                     | 0    | 0    | 0    | 0          | 0                   | 403  | 9    | 0    | 412        | 5                       | 0    | 0    | 0    | 5          | 629        |
| Total       | 19                  | 859  | 1    | 0    | 879        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1742 | 35   | 0    | 1777       | 16                      | 0    | 11   | 0    | 27         | 2683       |
| Grand Total | 25                  | 1752 | 5    | 0    | 1782       | 0                     | 0    | 0    | 0    | 0          | 0                   | 3405 | 54   | 0    | 3459       | 25                      | 0    | 20   | 0    | 45         | 5286       |
| Apprch %    | 1.4                 | 98.3 | 0.3  | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 98.4 | 1.6  | 0    |            | 55.6                    | 0    | 44.4 | 0    |            |            |
| Total %     | 0.5                 | 33.1 | 0.1  | 0    | 33.7       | 0                     | 0    | 0    | 0    | 0          | 0                   | 64.4 | 1    | 0    | 65.4       | 0.5                     | 0    | 0.4  | 0    | 0.9        |            |

|                                                            | US 29<br>Southbound |            |          |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |           |            | Keleigh Ln<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-----------------------|------|------|------------|---------------------|------------|-----------|------------|-------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru       | Left      | App. Total | Right                   | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                       |      |      |            |                     |            |           |            |                         |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                       |      |      |            |                     |            |           |            |                         |      |          |            |            |
| 04:30 PM                                                   | 2                   | <b>265</b> | 1        | <b>268</b> | 0                     | 0    | 0    | 0          | 0                   | 430        | 6         | 436        | 3                       | 0    | <b>4</b> | 7          | <b>711</b> |
| 04:45 PM                                                   | 3                   | 218        | <b>2</b> | 223        | 0                     | 0    | 0    | 0          | 0                   | <b>445</b> | 4         | 449        | 2                       | 0    | 1        | 3          | 675        |
| 05:00 PM                                                   | <b>8</b>            | 223        | 0        | 231        | 0                     | 0    | 0    | 0          | 0                   | 445        | 5         | 450        | <b>4</b>                | 0    | 4        | <b>8</b>   | 689        |
| 05:15 PM                                                   | 4                   | 205        | 0        | 209        | 0                     | 0    | 0    | 0          | 0                   | 442        | <b>11</b> | <b>453</b> | 1                       | 0    | 2        | 3          | 665        |
| Total Volume                                               | 17                  | 911        | 3        | 931        | 0                     | 0    | 0    | 0          | 0                   | 1762       | 26        | 1788       | 10                      | 0    | 11       | 21         | 2740       |
| % App. Total                                               | 1.8                 | 97.9       | 0.3      |            | 0                     | 0    | 0    |            | 0                   | 98.5       | 1.5       |            | 47.6                    | 0    | 52.4     |            |            |
| PHF                                                        | .531                | .859       | .375     | .868       | .000                  | .000 | .000 | .000       | .000                | .990       | .591      | .987       | .625                    | .000 | .688     | .656       | .963       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 1\_US 29 & Keleigh Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Keleigh Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 13   | 0    | 0    | 13         | 0                     | 0    | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 0                       | 0    | 0    | 0    | 0          | 28         |
| 04:15 PM    | 0                   | 12   | 0    | 0    | 12         | 0                     | 0    | 0    | 0    | 0          | 0                   | 13   | 0    | 0    | 13         | 0                       | 0    | 0    | 0    | 0          | 25         |
| 04:30 PM    | 0                   | 9    | 0    | 0    | 9          | 0                     | 0    | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 0                       | 0    | 0    | 0    | 0          | 20         |
| 04:45 PM    | 0                   | 12   | 0    | 0    | 12         | 0                     | 0    | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 0                       | 0    | 0    | 0    | 0          | 21         |
| Total       | 0                   | 46   | 0    | 0    | 46         | 0                     | 0    | 0    | 0    | 0          | 0                   | 48   | 0    | 0    | 48         | 0                       | 0    | 0    | 0    | 0          | 94         |
| 05:00 PM    | 0                   | 5    | 0    | 0    | 5          | 0                     | 0    | 0    | 0    | 0          | 0                   | 8    | 0    | 0    | 8          | 0                       | 0    | 0    | 0    | 0          | 13         |
| 05:15 PM    | 0                   | 5    | 0    | 0    | 5          | 0                     | 0    | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 0                       | 0    | 0    | 0    | 0          | 14         |
| 05:30 PM    | 0                   | 6    | 0    | 0    | 6          | 0                     | 0    | 0    | 0    | 0          | 0                   | 10   | 0    | 0    | 10         | 0                       | 0    | 0    | 0    | 0          | 16         |
| 05:45 PM    | 0                   | 3    | 0    | 0    | 3          | 0                     | 0    | 0    | 0    | 0          | 0                   | 6    | 0    | 0    | 6          | 0                       | 0    | 0    | 0    | 0          | 9          |
| Total       | 0                   | 19   | 0    | 0    | 19         | 0                     | 0    | 0    | 0    | 0          | 0                   | 33   | 0    | 0    | 33         | 0                       | 0    | 0    | 0    | 0          | 52         |
| Grand Total | 0                   | 65   | 0    | 0    | 65         | 0                     | 0    | 0    | 0    | 0          | 0                   | 81   | 0    | 0    | 81         | 0                       | 0    | 0    | 0    | 0          | 146        |
| Apprch %    | 0                   | 100  | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 100  | 0    | 0    |            | 0                       | 0    | 0    | 0    |            |            |
| Total %     | 0                   | 44.5 | 0    | 0    | 44.5       | 0                     | 0    | 0    | 0    | 0          | 0                   | 55.5 | 0    | 0    | 55.5       | 0                       | 0    | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Keleigh Ln<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 04:00 PM                                                   | 0                   | 13   | 0    | 13         | 0                     | 0    | 0    | 0          | 0                   | 15   | 0    | 15         | 0                       | 0    | 0    | 0          | 28         |
| 04:15 PM                                                   | 0                   | 12   | 0    | 12         | 0                     | 0    | 0    | 0          | 0                   | 13   | 0    | 13         | 0                       | 0    | 0    | 0          | 25         |
| 04:30 PM                                                   | 0                   | 9    | 0    | 9          | 0                     | 0    | 0    | 0          | 0                   | 11   | 0    | 11         | 0                       | 0    | 0    | 0          | 20         |
| 04:45 PM                                                   | 0                   | 12   | 0    | 12         | 0                     | 0    | 0    | 0          | 0                   | 9    | 0    | 9          | 0                       | 0    | 0    | 0          | 21         |
| Total Volume                                               | 0                   | 46   | 0    | 46         | 0                     | 0    | 0    | 0          | 0                   | 48   | 0    | 48         | 0                       | 0    | 0    | 0          | 94         |
| % App. Total                                               | 0                   | 100  | 0    |            | 0                     | 0    | 0    |            | 0                   | 100  | 0    |            | 0                       | 0    | 0    |            |            |
| PHF                                                        | .000                | .885 | .000 | .885       | .000                  | .000 | .000 | .000       | .000                | .800 | .000 | .800       | .000                    | .000 | .000 | .000       | .839       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 1\_US 29 & Keleigh Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Keleigh Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 1                   | 224  | 0    | 0    | 225        | 0                     | 0    | 0    | 0    | 0          | 0                   | 384  | 6    | 0    | 390        | 2                       | 0    | 2    | 0    | 4          | 619        |
| 04:15 PM    | 0                   | 211  | 1    | 0    | 212        | 0                     | 0    | 0    | 0    | 0          | 0                   | 432  | 3    | 0    | 435        | 2                       | 0    | 2    | 0    | 4          | 651        |
| 04:30 PM    | 2                   | 274  | 1    | 0    | 277        | 0                     | 0    | 0    | 0    | 0          | 0                   | 441  | 6    | 0    | 447        | 3                       | 0    | 4    | 0    | 7          | 731        |
| 04:45 PM    | 3                   | 230  | 2    | 0    | 235        | 0                     | 0    | 0    | 0    | 0          | 0                   | 454  | 4    | 0    | 458        | 2                       | 0    | 1    | 0    | 3          | 696        |
| Total       | 6                   | 939  | 4    | 0    | 949        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1711 | 19   | 0    | 1730       | 9                       | 0    | 9    | 0    | 18         | 2697       |
| 05:00 PM    | 8                   | 228  | 0    | 0    | 236        | 0                     | 0    | 0    | 0    | 0          | 0                   | 453  | 5    | 0    | 458        | 4                       | 0    | 4    | 0    | 8          | 702        |
| 05:15 PM    | 4                   | 210  | 0    | 0    | 214        | 0                     | 0    | 0    | 0    | 0          | 0                   | 451  | 11   | 0    | 462        | 1                       | 0    | 2    | 0    | 3          | 679        |
| 05:30 PM    | 1                   | 231  | 1    | 0    | 233        | 0                     | 0    | 0    | 0    | 0          | 0                   | 462  | 10   | 0    | 472        | 6                       | 0    | 5    | 0    | 11         | 716        |
| 05:45 PM    | 6                   | 209  | 0    | 0    | 215        | 0                     | 0    | 0    | 0    | 0          | 0                   | 409  | 9    | 0    | 418        | 5                       | 0    | 0    | 0    | 5          | 638        |
| Total       | 19                  | 878  | 1    | 0    | 898        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1775 | 35   | 0    | 1810       | 16                      | 0    | 11   | 0    | 27         | 2735       |
| Grand Total | 25                  | 1817 | 5    | 0    | 1847       | 0                     | 0    | 0    | 0    | 0          | 0                   | 3486 | 54   | 0    | 3540       | 25                      | 0    | 20   | 0    | 45         | 5432       |
| Apprch %    | 1.4                 | 98.4 | 0.3  | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 98.5 | 1.5  | 0    |            | 55.6                    | 0    | 44.4 | 0    |            |            |
| Total %     | 0.5                 | 33.4 | 0.1  | 0    | 34         | 0                     | 0    | 0    | 0    | 0          | 0                   | 64.2 | 1    | 0    | 65.2       | 0.5                     | 0    | 0.4  | 0    | 0.8        |            |

|                                                            | US 29<br>Southbound |            |          |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |           |            | Keleigh Ln<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-----------------------|------|------|------------|---------------------|------------|-----------|------------|-------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru       | Left      | App. Total | Right                   | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                       |      |      |            |                     |            |           |            |                         |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                       |      |      |            |                     |            |           |            |                         |      |          |            |            |
| 04:30 PM                                                   | 2                   | <b>274</b> | 1        | <b>277</b> | 0                     | 0    | 0    | 0          | 0                   | 441        | 6         | 447        | 3                       | 0    | <b>4</b> | 7          | <b>731</b> |
| 04:45 PM                                                   | 3                   | 230        | <b>2</b> | 235        | 0                     | 0    | 0    | 0          | 0                   | <b>454</b> | 4         | 458        | 2                       | 0    | 1        | 3          | 696        |
| 05:00 PM                                                   | <b>8</b>            | 228        | 0        | 236        | 0                     | 0    | 0    | 0          | 0                   | 453        | 5         | 458        | <b>4</b>                | 0    | 4        | <b>8</b>   | 702        |
| 05:15 PM                                                   | 4                   | 210        | 0        | 214        | 0                     | 0    | 0    | 0          | 0                   | 451        | <b>11</b> | <b>462</b> | 1                       | 0    | 2        | 3          | 679        |
| Total Volume                                               | 17                  | 942        | 3        | 962        | 0                     | 0    | 0    | 0          | 0                   | 1799       | 26        | 1825       | 10                      | 0    | 11       | 21         | 2808       |
| % App. Total                                               | 1.8                 | 97.9       | 0.3      |            | 0                     | 0    | 0    |            | 0                   | 98.6       | 1.4       |            | 47.6                    | 0    | 52.4     |            |            |
| PHF                                                        | .531                | .859       | .375     | .868       | .000                  | .000 | .000 | .000       | .000                | .991       | .591      | .988       | .625                    | .000 | .688     | .656       | .960       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 2\_US 29 & Commercial Ent. AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |            | Commercial Ent<br>Westbound |      |      |            | US 29<br>Northbound |      |      |      |            | Int. Total |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------|------------|------------|
|             | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total |            |
| 07:00 AM    | 389                 | 16   | 0    | 405        | 4                           | 12   | 0    | 16         | 2                   | 141  | 5    | 0    | 148        | 569        |
| 07:15 AM    | 433                 | 19   | 0    | 452        | 7                           | 17   | 0    | 24         | 8                   | 111  | 5    | 0    | 124        | 600        |
| 07:30 AM    | 435                 | 17   | 0    | 452        | 8                           | 15   | 0    | 23         | 8                   | 151  | 8    | 0    | 167        | 642        |
| 07:45 AM    | 351                 | 21   | 0    | 372        | 13                          | 11   | 0    | 24         | 7                   | 137  | 4    | 0    | 148        | 544        |
| Total       | 1608                | 73   | 0    | 1681       | 32                          | 55   | 0    | 87         | 25                  | 540  | 22   | 0    | 587        | 2355       |
| 08:00 AM    | 356                 | 27   | 0    | 383        | 11                          | 14   | 0    | 25         | 3                   | 145  | 5    | 0    | 153        | 561        |
| 08:15 AM    | 335                 | 18   | 0    | 353        | 8                           | 11   | 0    | 19         | 2                   | 138  | 6    | 0    | 146        | 518        |
| 08:30 AM    | 336                 | 12   | 0    | 348        | 10                          | 9    | 0    | 19         | 7                   | 139  | 6    | 0    | 152        | 519        |
| 08:45 AM    | 280                 | 17   | 0    | 297        | 13                          | 4    | 0    | 17         | 6                   | 154  | 3    | 0    | 163        | 477        |
| Total       | 1307                | 74   | 0    | 1381       | 42                          | 38   | 0    | 80         | 18                  | 576  | 20   | 0    | 614        | 2075       |
| Grand Total | 2915                | 147  | 0    | 3062       | 74                          | 93   | 0    | 167        | 43                  | 1116 | 42   | 0    | 1201       | 4430       |
| Apprch %    | 95.2                | 4.8  | 0    |            | 44.3                        | 55.7 | 0    |            | 3.6                 | 92.9 | 3.5  | 0    |            |            |
| Total %     | 65.8                | 3.3  | 0    | 69.1       | 1.7                         | 2.1  | 0    | 3.8        | 1                   | 25.2 | 0.9  | 0    | 27.1       |            |

|                                                            | US 29<br>Southbound |      |            | Commercial Ent<br>Westbound |      |            | US 29<br>Northbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |            |                             |      |            |                     |      |      |            |            |
| 07:00 AM                                                   | 389                 | 16   | 405        | 4                           | 12   | 16         | 2                   | 141  | 5    | 148        | 569        |
| 07:15 AM                                                   | 433                 | 19   | 452        | 7                           | 17   | 24         | 8                   | 111  | 5    | 124        | 600        |
| 07:30 AM                                                   | 435                 | 17   | 452        | 8                           | 15   | 23         | 8                   | 151  | 8    | 167        | 642        |
| 07:45 AM                                                   | 351                 | 21   | 372        | 13                          | 11   | 24         | 7                   | 137  | 4    | 148        | 544        |
| Total Volume                                               | 1608                | 73   | 1681       | 32                          | 55   | 87         | 25                  | 540  | 22   | 587        | 2355       |
| % App. Total                                               | 95.7                | 4.3  |            | 36.8                        | 63.2 |            | 4.3                 | 92   | 3.7  |            |            |
| PHF                                                        | .924                | .869 | .930       | .615                        | .809 | .906       | .781                | .894 | .688 | .879       | .917       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 2\_US 29 & Commercial Ent. AM  
 Site Code :  
 Start Date : 4/14/2021  
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### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |            | Commercial Ent<br>Westbound |      |      |            | US 29<br>Northbound |      |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 17                  | 0    | 0    | 17         | 0                           | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 32         |
| 07:15 AM    | 14                  | 1    | 0    | 15         | 0                           | 0    | 0    | 0          | 1                   | 24   | 0    | 0    | 25         | 40         |
| 07:30 AM    | 19                  | 0    | 0    | 19         | 1                           | 0    | 0    | 1          | 0                   | 13   | 0    | 0    | 13         | 33         |
| 07:45 AM    | 27                  | 1    | 0    | 28         | 0                           | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 43         |
| Total       | 77                  | 2    | 0    | 79         | 1                           | 0    | 0    | 1          | 1                   | 67   | 0    | 0    | 68         | 148        |
| 08:00 AM    | 17                  | 0    | 0    | 17         | 0                           | 0    | 0    | 0          | 0                   | 22   | 0    | 0    | 22         | 39         |
| 08:15 AM    | 17                  | 0    | 0    | 17         | 0                           | 0    | 0    | 0          | 0                   | 19   | 0    | 0    | 19         | 36         |
| 08:30 AM    | 16                  | 1    | 0    | 17         | 0                           | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 32         |
| 08:45 AM    | 23                  | 0    | 0    | 23         | 0                           | 0    | 0    | 0          | 0                   | 17   | 0    | 0    | 17         | 40         |
| Total       | 73                  | 1    | 0    | 74         | 0                           | 0    | 0    | 0          | 0                   | 73   | 0    | 0    | 73         | 147        |
| Grand Total | 150                 | 3    | 0    | 153        | 1                           | 0    | 0    | 1          | 1                   | 140  | 0    | 0    | 141        | 295        |
| Apprch %    | 98                  | 2    | 0    |            | 100                         | 0    | 0    |            | 0.7                 | 99.3 | 0    | 0    |            |            |
| Total %     | 50.8                | 1    | 0    | 51.9       | 0.3                         | 0    | 0    | 0.3        | 0.3                 | 47.5 | 0    | 0    | 47.8       |            |

|                                                            | US 29<br>Southbound |      |            | Commercial Ent<br>Westbound |      |            | US 29<br>Northbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |            |                             |      |            |                     |      |      |            |            |
| 07:15 AM                                                   | 14                  | 1    | 15         | 0                           | 0    | 0          | 1                   | 24   | 0    | 25         | 40         |
| 07:30 AM                                                   | 19                  | 0    | 19         | 1                           | 0    | 1          | 0                   | 13   | 0    | 13         | 33         |
| 07:45 AM                                                   | 27                  | 1    | 28         | 0                           | 0    | 0          | 0                   | 15   | 0    | 15         | 43         |
| 08:00 AM                                                   | 17                  | 0    | 17         | 0                           | 0    | 0          | 0                   | 22   | 0    | 22         | 39         |
| Total Volume                                               | 77                  | 2    | 79         | 1                           | 0    | 1          | 1                   | 74   | 0    | 75         | 155        |
| % App. Total                                               | 97.5                | 2.5  |            | 100                         | 0    |            | 1.3                 | 98.7 | 0    |            |            |
| PHF                                                        | .713                | .500 | .705       | .250                        | .000 | .250       | .250                | .771 | .000 | .750       | .901       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 2\_US 29 & Commercial Ent. AM  
 Site Code :  
 Start Date : 4/14/2021  
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### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |            | Commercial Ent<br>Westbound |      |      |            | US 29<br>Northbound |      |      |      |            | Int. Total |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------|------------|------------|
|             | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total |            |
| Start Time  |                     |      |      |            |                             |      |      |            |                     |      |      |      |            |            |
| 07:00 AM    | 406                 | 16   | 0    | 422        | 4                           | 12   | 0    | 16         | 2                   | 156  | 5    | 0    | 163        | 601        |
| 07:15 AM    | 447                 | 20   | 0    | 467        | 7                           | 17   | 0    | 24         | 9                   | 135  | 5    | 0    | 149        | 640        |
| 07:30 AM    | 454                 | 17   | 0    | 471        | 9                           | 15   | 0    | 24         | 8                   | 164  | 8    | 0    | 180        | 675        |
| 07:45 AM    | 378                 | 22   | 0    | 400        | 13                          | 11   | 0    | 24         | 7                   | 152  | 4    | 0    | 163        | 587        |
| Total       | 1685                | 75   | 0    | 1760       | 33                          | 55   | 0    | 88         | 26                  | 607  | 22   | 0    | 655        | 2503       |
|             |                     |      |      |            |                             |      |      |            |                     |      |      |      |            |            |
| 08:00 AM    | 373                 | 27   | 0    | 400        | 11                          | 14   | 0    | 25         | 3                   | 167  | 5    | 0    | 175        | 600        |
| 08:15 AM    | 352                 | 18   | 0    | 370        | 8                           | 11   | 0    | 19         | 2                   | 157  | 6    | 0    | 165        | 554        |
| 08:30 AM    | 352                 | 13   | 0    | 365        | 10                          | 9    | 0    | 19         | 7                   | 154  | 6    | 0    | 167        | 551        |
| 08:45 AM    | 303                 | 17   | 0    | 320        | 13                          | 4    | 0    | 17         | 6                   | 171  | 3    | 0    | 180        | 517        |
| Total       | 1380                | 75   | 0    | 1455       | 42                          | 38   | 0    | 80         | 18                  | 649  | 20   | 0    | 687        | 2222       |
|             |                     |      |      |            |                             |      |      |            |                     |      |      |      |            |            |
| Grand Total | 3065                | 150  | 0    | 3215       | 75                          | 93   | 0    | 168        | 44                  | 1256 | 42   | 0    | 1342       | 4725       |
| Apprch %    | 95.3                | 4.7  | 0    |            | 44.6                        | 55.4 | 0    |            | 3.3                 | 93.6 | 3.1  | 0    |            |            |
| Total %     | 64.9                | 3.2  | 0    | 68         | 1.6                         | 2    | 0    | 3.6        | 0.9                 | 26.6 | 0.9  | 0    | 28.4       |            |

|                                                            | US 29<br>Southbound |      |            | Commercial Ent<br>Westbound |      |            | US 29<br>Northbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |            |                             |      |            |                     |      |      |            |            |
| 07:00 AM                                                   | 406                 | 16   | 422        | 4                           | 12   | 16         | 2                   | 156  | 5    | 163        | 601        |
| 07:15 AM                                                   | 447                 | 20   | 467        | 7                           | 17   | 24         | 9                   | 135  | 5    | 149        | 640        |
| 07:30 AM                                                   | 454                 | 17   | 471        | 9                           | 15   | 24         | 8                   | 164  | 8    | 180        | 675        |
| 07:45 AM                                                   | 378                 | 22   | 400        | 13                          | 11   | 24         | 7                   | 152  | 4    | 163        | 587        |
| Total Volume                                               | 1685                | 75   | 1760       | 33                          | 55   | 88         | 26                  | 607  | 22   | 655        | 2503       |
| % App. Total                                               | 95.7                | 4.3  |            | 37.5                        | 62.5 |            | 4                   | 92.7 | 3.4  |            |            |
| PHF                                                        | .928                | .852 | .934       | .635                        | .809 | .917       | .722                | .925 | .688 | .910       | .927       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 2\_US 29 & Commercial Ent. PM  
 Site Code :  
 Start Date : 4/14/2021  
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### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |            | Commercial Ent<br>Westbound |      |      |            | US 29<br>Northbound |      |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 197                 | 14   | 0    | 211        | 9                           | 2    | 0    | 11         | 6                   | 343  | 4    | 0    | 353        | 575        |
| 04:15 PM    | 196                 | 15   | 0    | 211        | 5                           | 5    | 0    | 10         | 8                   | 410  | 2    | 0    | 420        | 641        |
| 04:30 PM    | 253                 | 10   | 0    | 263        | 10                          | 2    | 0    | 12         | 5                   | 419  | 4    | 0    | 428        | 703        |
| 04:45 PM    | 211                 | 19   | 0    | 230        | 8                           | 0    | 0    | 8          | 9                   | 441  | 3    | 0    | 453        | 691        |
| Total       | 857                 | 58   | 0    | 915        | 32                          | 9    | 0    | 41         | 28                  | 1613 | 13   | 0    | 1654       | 2610       |
| 05:00 PM    | 197                 | 19   | 0    | 216        | 15                          | 0    | 0    | 15         | 9                   | 410  | 2    | 0    | 421        | 652        |
| 05:15 PM    | 201                 | 16   | 0    | 217        | 11                          | 1    | 0    | 12         | 6                   | 449  | 2    | 0    | 457        | 686        |
| 05:30 PM    | 208                 | 11   | 0    | 219        | 12                          | 5    | 0    | 17         | 5                   | 429  | 5    | 0    | 439        | 675        |
| 05:45 PM    | 205                 | 10   | 0    | 215        | 11                          | 2    | 0    | 13         | 4                   | 399  | 6    | 0    | 409        | 637        |
| Total       | 811                 | 56   | 0    | 867        | 49                          | 8    | 0    | 57         | 24                  | 1687 | 15   | 0    | 1726       | 2650       |
| Grand Total | 1668                | 114  | 0    | 1782       | 81                          | 17   | 0    | 98         | 52                  | 3300 | 28   | 0    | 3380       | 5260       |
| Apprch %    | 93.6                | 6.4  | 0    |            | 82.7                        | 17.3 | 0    |            | 1.5                 | 97.6 | 0.8  | 0    |            |            |
| Total %     | 31.7                | 2.2  | 0    | 33.9       | 1.5                         | 0.3  | 0    | 1.9        | 1                   | 62.7 | 0.5  | 0    | 64.3       |            |

|                                                            | US 29<br>Southbound |           |            | Commercial Ent<br>Westbound |          |            | US 29<br>Northbound |            |          |            |            |
|------------------------------------------------------------|---------------------|-----------|------------|-----------------------------|----------|------------|---------------------|------------|----------|------------|------------|
| Start Time                                                 | Thru                | Left      | App. Total | Right                       | Left     | App. Total | Right               | Thru       | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |           |            |                             |          |            |                     |            |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |           |            |                             |          |            |                     |            |          |            |            |
| 04:30 PM                                                   | <b>253</b>          | 10        | <b>263</b> | 10                          | <b>2</b> | 12         | 5                   | 419        | <b>4</b> | 428        | <b>703</b> |
| 04:45 PM                                                   | 211                 | <b>19</b> | 230        | 8                           | 0        | 8          | <b>9</b>            | 441        | 3        | 453        | 691        |
| 05:00 PM                                                   | 197                 | 19        | 216        | <b>15</b>                   | 0        | <b>15</b>  | 9                   | 410        | 2        | 421        | 652        |
| 05:15 PM                                                   | 201                 | 16        | 217        | 11                          | 1        | 12         | 6                   | <b>449</b> | 2        | <b>457</b> | 686        |
| Total Volume                                               | 862                 | 64        | 926        | 44                          | 3        | 47         | 29                  | 1719       | 11       | 1759       | 2732       |
| % App. Total                                               | 93.1                | 6.9       |            | 93.6                        | 6.4      |            | 1.6                 | 97.7       | 0.6      |            |            |
| PHF                                                        | .852                | .842      | .880       | .733                        | .375     | .783       | .806                | .957       | .688     | .962       | .972       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 2\_US 29 & Commercial Ent. PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |            | Commercial Ent<br>Westbound |      |      |            | US 29<br>Northbound |      |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 12                  | 0    | 0    | 12         | 0                           | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 27         |
| 04:15 PM    | 14                  | 0    | 0    | 14         | 0                           | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 25         |
| 04:30 PM    | 10                  | 0    | 0    | 10         | 0                           | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 21         |
| 04:45 PM    | 11                  | 1    | 0    | 12         | 0                           | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 21         |
| Total       | 47                  | 1    | 0    | 48         | 0                           | 0    | 0    | 0          | 0                   | 46   | 0    | 0    | 46         | 94         |
| 05:00 PM    | 4                   | 0    | 0    | 4          | 0                           | 0    | 0    | 0          | 0                   | 8    | 0    | 0    | 8          | 12         |
| 05:15 PM    | 6                   | 0    | 0    | 6          | 0                           | 0    | 0    | 0          | 0                   | 8    | 0    | 0    | 8          | 14         |
| 05:30 PM    | 6                   | 0    | 0    | 6          | 0                           | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 17         |
| 05:45 PM    | 4                   | 0    | 0    | 4          | 0                           | 0    | 0    | 0          | 0                   | 6    | 0    | 0    | 6          | 10         |
| Total       | 20                  | 0    | 0    | 20         | 0                           | 0    | 0    | 0          | 0                   | 33   | 0    | 0    | 33         | 53         |
| Grand Total | 67                  | 1    | 0    | 68         | 0                           | 0    | 0    | 0          | 0                   | 79   | 0    | 0    | 79         | 147        |
| Apprch %    | 98.5                | 1.5  | 0    |            | 0                           | 0    | 0    |            | 0                   | 100  | 0    | 0    |            |            |
| Total %     | 45.6                | 0.7  | 0    | 46.3       | 0                           | 0    | 0    | 0          | 0                   | 53.7 | 0    | 0    | 53.7       |            |

|                                                            | US 29<br>Southbound |      |            | Commercial Ent<br>Westbound |      |            | US 29<br>Northbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |            |                             |      |            |                     |      |      |            |            |
| 04:00 PM                                                   | 12                  | 0    | 12         | 0                           | 0    | 0          | 0                   | 15   | 0    | 15         | 27         |
| 04:15 PM                                                   | 14                  | 0    | 14         | 0                           | 0    | 0          | 0                   | 11   | 0    | 11         | 25         |
| 04:30 PM                                                   | 10                  | 0    | 10         | 0                           | 0    | 0          | 0                   | 11   | 0    | 11         | 21         |
| 04:45 PM                                                   | 11                  | 1    | 12         | 0                           | 0    | 0          | 0                   | 9    | 0    | 9          | 21         |
| Total Volume                                               | 47                  | 1    | 48         | 0                           | 0    | 0          | 0                   | 46   | 0    | 46         | 94         |
| % App. Total                                               | 97.9                | 2.1  |            | 0                           | 0    |            | 0                   | 100  | 0    |            |            |
| PHF                                                        | .839                | .250 | .857       | .000                        | .000 | .000       | .000                | .767 | .000 | .767       | .870       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 2\_US 29 & Commercial Ent. PM  
 Site Code :  
 Start Date : 4/14/2021  
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### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |            | Commercial Ent<br>Westbound |      |      |            | US 29<br>Northbound |      |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 209                 | 14   | 0    | 223        | 9                           | 2    | 0    | 11         | 6                   | 358  | 4    | 0    | 368        | 602        |
| 04:15 PM    | 210                 | 15   | 0    | 225        | 5                           | 5    | 0    | 10         | 8                   | 421  | 2    | 0    | 431        | 666        |
| 04:30 PM    | 263                 | 10   | 0    | 273        | 10                          | 2    | 0    | 12         | 5                   | 430  | 4    | 0    | 439        | 724        |
| 04:45 PM    | 222                 | 20   | 0    | 242        | 8                           | 0    | 0    | 8          | 9                   | 450  | 3    | 0    | 462        | 712        |
| Total       | 904                 | 59   | 0    | 963        | 32                          | 9    | 0    | 41         | 28                  | 1659 | 13   | 0    | 1700       | 2704       |
| 05:00 PM    | 201                 | 19   | 0    | 220        | 15                          | 0    | 0    | 15         | 9                   | 418  | 2    | 0    | 429        | 664        |
| 05:15 PM    | 207                 | 16   | 0    | 223        | 11                          | 1    | 0    | 12         | 6                   | 457  | 2    | 0    | 465        | 700        |
| 05:30 PM    | 214                 | 11   | 0    | 225        | 12                          | 5    | 0    | 17         | 5                   | 440  | 5    | 0    | 450        | 692        |
| 05:45 PM    | 209                 | 10   | 0    | 219        | 11                          | 2    | 0    | 13         | 4                   | 405  | 6    | 0    | 415        | 647        |
| Total       | 831                 | 56   | 0    | 887        | 49                          | 8    | 0    | 57         | 24                  | 1720 | 15   | 0    | 1759       | 2703       |
| Grand Total | 1735                | 115  | 0    | 1850       | 81                          | 17   | 0    | 98         | 52                  | 3379 | 28   | 0    | 3459       | 5407       |
| Apprch %    | 93.8                | 6.2  | 0    |            | 82.7                        | 17.3 | 0    |            | 1.5                 | 97.7 | 0.8  | 0    |            |            |
| Total %     | 32.1                | 2.1  | 0    | 34.2       | 1.5                         | 0.3  | 0    | 1.8        | 1                   | 62.5 | 0.5  | 0    | 64         |            |

|                                                            | US 29<br>Southbound |      |            | Commercial Ent<br>Westbound |      |            | US 29<br>Northbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |            |                             |      |            |                     |      |      |            |            |
| 04:30 PM                                                   | 263                 | 10   | 273        | 10                          | 2    | 12         | 5                   | 430  | 4    | 439        | 724        |
| 04:45 PM                                                   | 222                 | 20   | 242        | 8                           | 0    | 8          | 9                   | 450  | 3    | 462        | 712        |
| 05:00 PM                                                   | 201                 | 19   | 220        | 15                          | 0    | 15         | 9                   | 418  | 2    | 429        | 664        |
| 05:15 PM                                                   | 207                 | 16   | 223        | 11                          | 1    | 12         | 6                   | 457  | 2    | 465        | 700        |
| Total Volume                                               | 893                 | 65   | 958        | 44                          | 3    | 47         | 29                  | 1755 | 11   | 1795       | 2800       |
| % App. Total                                               | 93.2                | 6.8  |            | 93.6                        | 6.4  |            | 1.6                 | 97.8 | 0.6  |            |            |
| PHF                                                        | .849                | .813 | .877       | .733                        | .375 | .783       | .806                | .960 | .688 | .965       | .967       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 3\_US 29 & Lake Saponi Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |            | Lake Saponi Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Peds | App. Total | Int. Total |
| 07:00 AM    | 405                 | 0    | 0    | 405        | 10                          | 0    | 0    | 10         | 1                   | 136  | 0    | 137        | 552        |
| 07:15 AM    | 445                 | 0    | 0    | 445        | 13                          | 0    | 0    | 13         | 4                   | 114  | 0    | 118        | 576        |
| 07:30 AM    | 462                 | 0    | 0    | 462        | 9                           | 0    | 0    | 9          | 3                   | 153  | 0    | 156        | 627        |
| 07:45 AM    | 370                 | 0    | 0    | 370        | 6                           | 0    | 0    | 6          | 5                   | 138  | 0    | 143        | 519        |
| Total       | 1682                | 0    | 0    | 1682       | 38                          | 0    | 0    | 38         | 13                  | 541  | 0    | 554        | 2274       |
| 08:00 AM    | 376                 | 0    | 0    | 376        | 11                          | 0    | 0    | 11         | 7                   | 141  | 0    | 148        | 535        |
| 08:15 AM    | 352                 | 0    | 0    | 352        | 11                          | 0    | 0    | 11         | 8                   | 135  | 0    | 143        | 506        |
| 08:30 AM    | 352                 | 0    | 0    | 352        | 9                           | 0    | 0    | 9          | 4                   | 144  | 0    | 148        | 509        |
| 08:45 AM    | 291                 | 0    | 0    | 291        | 5                           | 0    | 0    | 5          | 3                   | 151  | 0    | 154        | 450        |
| Total       | 1371                | 0    | 0    | 1371       | 36                          | 0    | 0    | 36         | 22                  | 571  | 0    | 593        | 2000       |
| Grand Total | 3053                | 0    | 0    | 3053       | 74                          | 0    | 0    | 74         | 35                  | 1112 | 0    | 1147       | 4274       |
| Apprch %    | 100                 | 0    | 0    |            | 100                         | 0    | 0    |            | 3.1                 | 96.9 | 0    |            |            |
| Total %     | 71.4                | 0    | 0    | 71.4       | 1.7                         | 0    | 0    | 1.7        | 0.8                 | 26   | 0    | 26.8       |            |

|                                                            | US 29<br>Southbound |      |            | Lake Saponi Dr<br>Westbound |      |            | US 29<br>Northbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |            |                             |      |            |                     |      |            |            |
| 07:00 AM                                                   | 405                 | 0    | 405        | 10                          | 0    | 10         | 1                   | 136  | 137        | 552        |
| 07:15 AM                                                   | 445                 | 0    | 445        | 13                          | 0    | 13         | 4                   | 114  | 118        | 576        |
| 07:30 AM                                                   | 462                 | 0    | 462        | 9                           | 0    | 9          | 3                   | 153  | 156        | 627        |
| 07:45 AM                                                   | 370                 | 0    | 370        | 6                           | 0    | 6          | 5                   | 138  | 143        | 519        |
| Total Volume                                               | 1682                | 0    | 1682       | 38                          | 0    | 38         | 13                  | 541  | 554        | 2274       |
| % App. Total                                               | 100                 | 0    |            | 100                         | 0    |            | 2.3                 | 97.7 |            |            |
| PHF                                                        | .910                | .000 | .910       | .731                        | .000 | .731       | .650                | .884 | .888       | .907       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 3\_US 29 & Lake Saponi Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |            | Lake Saponi Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Peds | App. Total | Int. Total |
| 07:00 AM    | 17                  | 0    | 0    | 17         | 0                           | 0    | 0    | 0          | 2                   | 15   | 0    | 17         | 34         |
| 07:15 AM    | 16                  | 0    | 0    | 16         | 0                           | 0    | 0    | 0          | 1                   | 24   | 0    | 25         | 41         |
| 07:30 AM    | 17                  | 0    | 0    | 17         | 1                           | 0    | 0    | 1          | 0                   | 14   | 0    | 14         | 32         |
| 07:45 AM    | 27                  | 0    | 0    | 27         | 2                           | 0    | 0    | 2          | 1                   | 11   | 0    | 12         | 41         |
| Total       | 77                  | 0    | 0    | 77         | 3                           | 0    | 0    | 3          | 4                   | 64   | 0    | 68         | 148        |
| 08:00 AM    | 17                  | 0    | 0    | 17         | 0                           | 0    | 0    | 0          | 0                   | 21   | 0    | 21         | 38         |
| 08:15 AM    | 18                  | 0    | 0    | 18         | 0                           | 0    | 0    | 0          | 0                   | 18   | 0    | 18         | 36         |
| 08:30 AM    | 16                  | 0    | 0    | 16         | 0                           | 0    | 0    | 0          | 0                   | 15   | 0    | 15         | 31         |
| 08:45 AM    | 23                  | 0    | 0    | 23         | 1                           | 0    | 0    | 1          | 1                   | 16   | 0    | 17         | 41         |
| Total       | 74                  | 0    | 0    | 74         | 1                           | 0    | 0    | 1          | 1                   | 70   | 0    | 71         | 146        |
| Grand Total | 151                 | 0    | 0    | 151        | 4                           | 0    | 0    | 4          | 5                   | 134  | 0    | 139        | 294        |
| Apprch %    | 100                 | 0    | 0    |            | 100                         | 0    | 0    |            | 3.6                 | 96.4 | 0    |            |            |
| Total %     | 51.4                | 0    | 0    | 51.4       | 1.4                         | 0    | 0    | 1.4        | 1.7                 | 45.6 | 0    | 47.3       |            |

|                                                            | US 29<br>Southbound |      |            | Lake Saponi Dr<br>Westbound |      |            | US 29<br>Northbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |            |                             |      |            |                     |      |            |            |
| 07:15 AM                                                   | 16                  | 0    | 16         | 0                           | 0    | 0          | 1                   | 24   | 25         | 41         |
| 07:30 AM                                                   | 17                  | 0    | 17         | 1                           | 0    | 1          | 0                   | 14   | 14         | 32         |
| 07:45 AM                                                   | 27                  | 0    | 27         | 2                           | 0    | 2          | 1                   | 11   | 12         | 41         |
| 08:00 AM                                                   | 17                  | 0    | 17         | 0                           | 0    | 0          | 0                   | 21   | 21         | 38         |
| Total Volume                                               | 77                  | 0    | 77         | 3                           | 0    | 3          | 2                   | 70   | 72         | 152        |
| % App. Total                                               | 100                 | 0    |            | 100                         | 0    |            | 2.8                 | 97.2 |            |            |
| PHF                                                        | .713                | .000 | .713       | .375                        | .000 | .375       | .500                | .729 | .720       | .927       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 3\_US 29 & Lake Saponi Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |            | Lake Saponi Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Peds | App. Total | Int. Total |
| 07:00 AM    | 422                 | 0    | 0    | 422        | 10                          | 0    | 0    | 10         | 3                   | 151  | 0    | 154        | 586        |
| 07:15 AM    | 461                 | 0    | 0    | 461        | 13                          | 0    | 0    | 13         | 5                   | 138  | 0    | 143        | 617        |
| 07:30 AM    | 479                 | 0    | 0    | 479        | 10                          | 0    | 0    | 10         | 3                   | 167  | 0    | 170        | 659        |
| 07:45 AM    | 397                 | 0    | 0    | 397        | 8                           | 0    | 0    | 8          | 6                   | 149  | 0    | 155        | 560        |
| Total       | 1759                | 0    | 0    | 1759       | 41                          | 0    | 0    | 41         | 17                  | 605  | 0    | 622        | 2422       |
| 08:00 AM    | 393                 | 0    | 0    | 393        | 11                          | 0    | 0    | 11         | 7                   | 162  | 0    | 169        | 573        |
| 08:15 AM    | 370                 | 0    | 0    | 370        | 11                          | 0    | 0    | 11         | 8                   | 153  | 0    | 161        | 542        |
| 08:30 AM    | 368                 | 0    | 0    | 368        | 9                           | 0    | 0    | 9          | 4                   | 159  | 0    | 163        | 540        |
| 08:45 AM    | 314                 | 0    | 0    | 314        | 6                           | 0    | 0    | 6          | 4                   | 167  | 0    | 171        | 491        |
| Total       | 1445                | 0    | 0    | 1445       | 37                          | 0    | 0    | 37         | 23                  | 641  | 0    | 664        | 2146       |
| Grand Total | 3204                | 0    | 0    | 3204       | 78                          | 0    | 0    | 78         | 40                  | 1246 | 0    | 1286       | 4568       |
| Apprch %    | 100                 | 0    | 0    |            | 100                         | 0    | 0    |            | 3.1                 | 96.9 | 0    |            |            |
| Total %     | 70.1                | 0    | 0    | 70.1       | 1.7                         | 0    | 0    | 1.7        | 0.9                 | 27.3 | 0    | 28.2       |            |

|                                                            | US 29<br>Southbound |      |            | Lake Saponi Dr<br>Westbound |      |            | US 29<br>Northbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |            |                             |      |            |                     |      |            |            |
| 07:00 AM                                                   | 422                 | 0    | 422        | 10                          | 0    | 10         | 3                   | 151  | 154        | 586        |
| 07:15 AM                                                   | 461                 | 0    | 461        | 13                          | 0    | 13         | 5                   | 138  | 143        | 617        |
| 07:30 AM                                                   | 479                 | 0    | 479        | 10                          | 0    | 10         | 3                   | 167  | 170        | 659        |
| 07:45 AM                                                   | 397                 | 0    | 397        | 8                           | 0    | 8          | 6                   | 149  | 155        | 560        |
| Total Volume                                               | 1759                | 0    | 1759       | 41                          | 0    | 41         | 17                  | 605  | 622        | 2422       |
| % App. Total                                               | 100                 | 0    |            | 100                         | 0    |            | 2.7                 | 97.3 |            |            |
| PHF                                                        | .918                | .000 | .918       | .788                        | .000 | .788       | .708                | .906 | .915       | .919       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 3\_US 29 & Lake Saponi Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |            | Lake Saponi Dr Westbound |      |      |            | US 29 Northbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------------|--------------------------|------|------|------------|------------------|------|------|------------|------------|
|             | Thru             | Left | Peds | App. Total | Right                    | Left | Peds | App. Total | Right            | Thru | Peds | App. Total |            |
| 04:00 PM    | 197              | 0    | 0    | 197        | 8                        | 0    | 0    | 8          | 12               | 362  | 0    | 374        | 579        |
| 04:15 PM    | 206              | 0    | 0    | 206        | 5                        | 0    | 0    | 5          | 9                | 413  | 0    | 422        | 633        |
| 04:30 PM    | 257              | 0    | 0    | 257        | 12                       | 0    | 0    | 12         | 13               | 416  | 0    | 429        | 698        |
| 04:45 PM    | 212              | 0    | 0    | 212        | 7                        | 0    | 0    | 7          | 9                | 432  | 0    | 441        | 660        |
| Total       | 872              | 0    | 0    | 872        | 32                       | 0    | 0    | 32         | 43               | 1623 | 0    | 1666       | 2570       |
| 05:00 PM    | 197              | 0    | 0    | 197        | 7                        | 0    | 0    | 7          | 14               | 421  | 0    | 435        | 639        |
| 05:15 PM    | 209              | 0    | 0    | 209        | 8                        | 0    | 0    | 8          | 12               | 438  | 0    | 450        | 667        |
| 05:30 PM    | 218              | 0    | 0    | 218        | 5                        | 0    | 0    | 5          | 9                | 440  | 0    | 449        | 672        |
| 05:45 PM    | 217              | 0    | 0    | 217        | 10                       | 0    | 0    | 10         | 7                | 394  | 0    | 401        | 628        |
| Total       | 841              | 0    | 0    | 841        | 30                       | 0    | 0    | 30         | 42               | 1693 | 0    | 1735       | 2606       |
| Grand Total | 1713             | 0    | 0    | 1713       | 62                       | 0    | 0    | 62         | 85               | 3316 | 0    | 3401       | 5176       |
| Apprch %    | 100              | 0    | 0    |            | 100                      | 0    | 0    |            | 2.5              | 97.5 | 0    |            |            |
| Total %     | 33.1             | 0    | 0    | 33.1       | 1.2                      | 0    | 0    | 1.2        | 1.6              | 64.1 | 0    | 65.7       |            |

|                                                            | US 29<br>Southbound |      |            | Lake Saponi Dr<br>Westbound |      |            | US 29<br>Northbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |            |                             |      |            |                     |      |            |            |
| 04:30 PM                                                   | 257                 | 0    | 257        | 12                          | 0    | 12         | 13                  | 416  | 429        | 698        |
| 04:45 PM                                                   | 212                 | 0    | 212        | 7                           | 0    | 7          | 9                   | 432  | 441        | 660        |
| 05:00 PM                                                   | 197                 | 0    | 197        | 7                           | 0    | 7          | 14                  | 421  | 435        | 639        |
| 05:15 PM                                                   | 209                 | 0    | 209        | 8                           | 0    | 8          | 12                  | 438  | 450        | 667        |
| Total Volume                                               | 875                 | 0    | 875        | 34                          | 0    | 34         | 48                  | 1707 | 1755       | 2664       |
| % App. Total                                               | 100                 | 0    |            | 100                         | 0    |            | 2.7                 | 97.3 |            |            |
| PHF                                                        | .851                | .000 | .851       | .708                        | .000 | .708       | .857                | .974 | .975       | .954       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 3\_US 29 & Lake Saponi Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

| Start Time  | US 29<br>Southbound |      |      |            | Lake Saponi Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Int. Total |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------------|------------|
|             | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Peds | App. Total |            |
| 04:00 PM    | 12                  | 0    | 0    | 12         | 0                           | 0    | 0    | 0          | 0                   | 13   | 0    | 13         | 25         |
| 04:15 PM    | 14                  | 0    | 0    | 14         | 0                           | 0    | 0    | 0          | 1                   | 11   | 0    | 12         | 26         |
| 04:30 PM    | 11                  | 0    | 0    | 11         | 1                           | 0    | 0    | 1          | 0                   | 10   | 0    | 10         | 22         |
| 04:45 PM    | 10                  | 0    | 0    | 10         | 0                           | 0    | 0    | 0          | 0                   | 9    | 0    | 9          | 19         |
| Total       | 47                  | 0    | 0    | 47         | 1                           | 0    | 0    | 1          | 1                   | 43   | 0    | 44         | 92         |
| 05:00 PM    | 3                   | 0    | 0    | 3          | 1                           | 0    | 0    | 1          | 0                   | 7    | 0    | 7          | 11         |
| 05:15 PM    | 6                   | 0    | 0    | 6          | 0                           | 0    | 0    | 0          | 0                   | 8    | 0    | 8          | 14         |
| 05:30 PM    | 5                   | 0    | 0    | 5          | 0                           | 0    | 0    | 0          | 0                   | 11   | 0    | 11         | 16         |
| 05:45 PM    | 4                   | 0    | 0    | 4          | 0                           | 0    | 0    | 0          | 0                   | 7    | 0    | 7          | 11         |
| Total       | 18                  | 0    | 0    | 18         | 1                           | 0    | 0    | 1          | 0                   | 33   | 0    | 33         | 52         |
| Grand Total | 65                  | 0    | 0    | 65         | 2                           | 0    | 0    | 2          | 1                   | 76   | 0    | 77         | 144        |
| Apprch %    | 100                 | 0    | 0    |            | 100                         | 0    | 0    |            | 1.3                 | 98.7 | 0    |            |            |
| Total %     | 45.1                | 0    | 0    | 45.1       | 1.4                         | 0    | 0    | 1.4        | 0.7                 | 52.8 | 0    | 53.5       |            |

|                                                            | US 29<br>Southbound |      |            | Lake Saponi Dr<br>Westbound |      |            | US 29<br>Northbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |            |                             |      |            |                     |      |            |            |
| 04:00 PM                                                   | 12                  | 0    | 12         | 0                           | 0    | 0          | 0                   | 13   | 13         | 25         |
| 04:15 PM                                                   | 14                  | 0    | 14         | 0                           | 0    | 0          | 1                   | 11   | 12         | 26         |
| 04:30 PM                                                   | 11                  | 0    | 11         | 1                           | 0    | 1          | 0                   | 10   | 10         | 22         |
| 04:45 PM                                                   | 10                  | 0    | 10         | 0                           | 0    | 0          | 0                   | 9    | 9          | 19         |
| Total Volume                                               | 47                  | 0    | 47         | 1                           | 0    | 1          | 1                   | 43   | 44         | 92         |
| % App. Total                                               | 100                 | 0    |            | 100                         | 0    |            | 2.3                 | 97.7 |            |            |
| PHF                                                        | .839                | .000 | .839       | .250                        | .000 | .250       | .250                | .827 | .846       | .885       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 3\_US 29 & Lake Saponi Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |            | Lake Saponi Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            |            |
|-------------|---------------------|------|------|------------|-----------------------------|------|------|------------|---------------------|------|------|------------|------------|
| Start Time  | Thru                | Left | Peds | App. Total | Right                       | Left | Peds | App. Total | Right               | Thru | Peds | App. Total | Int. Total |
| 04:00 PM    | 209                 | 0    | 0    | 209        | 8                           | 0    | 0    | 8          | 12                  | 375  | 0    | 387        | 604        |
| 04:15 PM    | 220                 | 0    | 0    | 220        | 5                           | 0    | 0    | 5          | 10                  | 424  | 0    | 434        | 659        |
| 04:30 PM    | 268                 | 0    | 0    | 268        | 13                          | 0    | 0    | 13         | 13                  | 426  | 0    | 439        | 720        |
| 04:45 PM    | 222                 | 0    | 0    | 222        | 7                           | 0    | 0    | 7          | 9                   | 441  | 0    | 450        | 679        |
| Total       | 919                 | 0    | 0    | 919        | 33                          | 0    | 0    | 33         | 44                  | 1666 | 0    | 1710       | 2662       |
| 05:00 PM    | 200                 | 0    | 0    | 200        | 8                           | 0    | 0    | 8          | 14                  | 428  | 0    | 442        | 650        |
| 05:15 PM    | 215                 | 0    | 0    | 215        | 8                           | 0    | 0    | 8          | 12                  | 446  | 0    | 458        | 681        |
| 05:30 PM    | 223                 | 0    | 0    | 223        | 5                           | 0    | 0    | 5          | 9                   | 451  | 0    | 460        | 688        |
| 05:45 PM    | 221                 | 0    | 0    | 221        | 10                          | 0    | 0    | 10         | 7                   | 401  | 0    | 408        | 639        |
| Total       | 859                 | 0    | 0    | 859        | 31                          | 0    | 0    | 31         | 42                  | 1726 | 0    | 1768       | 2658       |
| Grand Total | 1778                | 0    | 0    | 1778       | 64                          | 0    | 0    | 64         | 86                  | 3392 | 0    | 3478       | 5320       |
| Apprch %    | 100                 | 0    | 0    |            | 100                         | 0    | 0    |            | 2.5                 | 97.5 | 0    |            |            |
| Total %     | 33.4                | 0    | 0    | 33.4       | 1.2                         | 0    | 0    | 1.2        | 1.6                 | 63.8 | 0    | 65.4       |            |

|                                                            | US 29<br>Southbound |      |            | Lake Saponi Dr<br>Westbound |      |            | US 29<br>Northbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------------|-----------------------------|------|------------|---------------------|------|------------|------------|
| Start Time                                                 | Thru                | Left | App. Total | Right                       | Left | App. Total | Right               | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |            |                             |      |            |                     |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |            |                             |      |            |                     |      |            |            |
| 04:30 PM                                                   | 268                 | 0    | 268        | 13                          | 0    | 13         | 13                  | 426  | 439        | 720        |
| 04:45 PM                                                   | 222                 | 0    | 222        | 7                           | 0    | 7          | 9                   | 441  | 450        | 679        |
| 05:00 PM                                                   | 200                 | 0    | 200        | 8                           | 0    | 8          | 14                  | 428  | 442        | 650        |
| 05:15 PM                                                   | 215                 | 0    | 215        | 8                           | 0    | 8          | 12                  | 446  | 458        | 681        |
| Total Volume                                               | 905                 | 0    | 905        | 36                          | 0    | 36         | 48                  | 1741 | 1789       | 2730       |
| % App. Total                                               | 100                 | 0    |            | 100                         | 0    |            | 2.7                 | 97.3 |            |            |
| PHF                                                        | .844                | .000 | .844       | .692                        | .000 | .692       | .857                | .976 | .977       | .948       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 4\_US 29 & Greene Edge Ln AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Greene Edge Ln Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|--------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                    | Left | Peds | App. Total |            |
| 07:00 AM    | 0                | 407  | 0    | 0    | 407        | 136              | 0    | 0    | 136        | 1                        | 0    | 0    | 1          | 544        |
| 07:15 AM    | 0                | 442  | 1    | 0    | 443        | 121              | 0    | 0    | 121        | 0                        | 0    | 0    | 0          | 564        |
| 07:30 AM    | 0                | 463  | 1    | 0    | 464        | 154              | 0    | 0    | 154        | 0                        | 0    | 0    | 0          | 618        |
| 07:45 AM    | 0                | 364  | 3    | 0    | 367        | 146              | 1    | 0    | 147        | 0                        | 0    | 0    | 0          | 514        |
| Total       | 0                | 1676 | 5    | 0    | 1681       | 557              | 1    | 0    | 558        | 1                        | 0    | 0    | 1          | 2240       |
| 08:00 AM    | 0                | 369  | 4    | 0    | 373        | 137              | 1    | 0    | 138        | 0                        | 0    | 0    | 0          | 511        |
| 08:15 AM    | 0                | 347  | 4    | 0    | 351        | 140              | 0    | 0    | 140        | 0                        | 0    | 0    | 0          | 491        |
| 08:30 AM    | 0                | 346  | 3    | 0    | 349        | 143              | 0    | 0    | 143        | 0                        | 0    | 0    | 0          | 492        |
| 08:45 AM    | 0                | 285  | 2    | 0    | 287        | 166              | 0    | 0    | 166        | 0                        | 1    | 0    | 1          | 454        |
| Total       | 0                | 1347 | 13   | 0    | 1360       | 586              | 1    | 0    | 587        | 0                        | 1    | 0    | 1          | 1948       |
| Grand Total | 0                | 3023 | 18   | 0    | 3041       | 1143             | 2    | 0    | 1145       | 1                        | 1    | 0    | 2          | 4188       |
| Apprch %    | 0                | 99.4 | 0.6  | 0    |            | 99.8             | 0.2  | 0    |            | 50                       | 50   | 0    |            |            |
| Total %     | 0                | 72.2 | 0.4  | 0    | 72.6       | 27.3             | 0    | 0    | 27.3       | 0                        | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Greene Edge Ln<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-----------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                       | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                             |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                     |      |            |                             |      |            |            |
| 07:00 AM                                                   | 0                   | 407  | 0    | 407        | 136                 | 0    | 136        | 1                           | 0    | 1          | 544        |
| 07:15 AM                                                   | 0                   | 442  | 1    | 443        | 121                 | 0    | 121        | 0                           | 0    | 0          | 564        |
| 07:30 AM                                                   | 0                   | 463  | 1    | 464        | 154                 | 0    | 154        | 0                           | 0    | 0          | 618        |
| 07:45 AM                                                   | 0                   | 364  | 3    | 367        | 146                 | 1    | 147        | 0                           | 0    | 0          | 514        |
| Total Volume                                               | 0                   | 1676 | 5    | 1681       | 557                 | 1    | 558        | 1                           | 0    | 1          | 2240       |
| % App. Total                                               | 0                   | 99.7 | 0.3  |            | 99.8                | 0.2  |            | 100                         | 0    |            |            |
| PHF                                                        | .000                | .905 | .417 | .906       | .904                | .250 | .906       | .250                        | .000 | .250       | .906       |

Peggy Malone & Associates  
(888) 247-8602

File Name : 4\_US 29 & Greene Edge Ln AM  
Site Code :  
Start Date : 4/14/2021  
Page No : 1

Groups Printed- Trucks

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Greene Edge Ln Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|--------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                    | Left | Peds | App. Total |            |
| 07:00 AM    | 0                | 15   | 1    | 0    | 16         | 16               | 0    | 0    | 16         | 0                        | 0    | 0    | 0          | 32         |
| 07:15 AM    | 0                | 14   | 1    | 0    | 15         | 24               | 0    | 0    | 24         | 0                        | 0    | 0    | 0          | 39         |
| 07:30 AM    | 0                | 17   | 0    | 0    | 17         | 13               | 0    | 0    | 13         | 0                        | 0    | 0    | 0          | 30         |
| 07:45 AM    | 0                | 26   | 1    | 0    | 27         | 14               | 0    | 0    | 14         | 0                        | 0    | 0    | 0          | 41         |
| Total       | 0                | 72   | 3    | 0    | 75         | 67               | 0    | 0    | 67         | 0                        | 0    | 0    | 0          | 142        |
| 08:00 AM    | 0                | 15   | 0    | 0    | 15         | 21               | 0    | 0    | 21         | 0                        | 0    | 0    | 0          | 36         |
| 08:15 AM    | 0                | 21   | 0    | 0    | 21         | 20               | 0    | 0    | 20         | 0                        | 0    | 0    | 0          | 41         |
| 08:30 AM    | 0                | 19   | 0    | 0    | 19         | 14               | 0    | 0    | 14         | 0                        | 0    | 0    | 0          | 33         |
| 08:45 AM    | 0                | 21   | 1    | 0    | 22         | 16               | 0    | 0    | 16         | 0                        | 0    | 0    | 0          | 38         |
| Total       | 0                | 76   | 1    | 0    | 77         | 71               | 0    | 0    | 71         | 0                        | 0    | 0    | 0          | 148        |
| Grand Total | 0                | 148  | 4    | 0    | 152        | 138              | 0    | 0    | 138        | 0                        | 0    | 0    | 0          | 290        |
| Apprch %    | 0                | 97.4 | 2.6  | 0    |            | 100              | 0    | 0    |            | 0                        | 0    | 0    |            |            |
| Total %     | 0                | 51   | 1.4  | 0    | 52.4       | 47.6             | 0    | 0    | 47.6       | 0                        | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Greene Edge Ln<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-----------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                       | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                             |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM       |                     |      |      |            |                     |      |            |                             |      |            |            |
| 07:45 AM                                                   | 0                   | 26   | 1    | 27         | 14                  | 0    | 14         | 0                           | 0    | 0          | 41         |
| 08:00 AM                                                   | 0                   | 15   | 0    | 15         | 21                  | 0    | 21         | 0                           | 0    | 0          | 36         |
| 08:15 AM                                                   | 0                   | 21   | 0    | 21         | 20                  | 0    | 20         | 0                           | 0    | 0          | 41         |
| 08:30 AM                                                   | 0                   | 19   | 0    | 19         | 14                  | 0    | 14         | 0                           | 0    | 0          | 33         |
| Total Volume                                               | 0                   | 81   | 1    | 82         | 69                  | 0    | 69         | 0                           | 0    | 0          | 151        |
| % App. Total                                               | 0                   | 98.8 | 1.2  |            | 100                 | 0    |            | 0                           | 0    |            |            |
| PHF                                                        | .000                | .779 | .250 | .759       | .821                | .000 | .821       | .000                        | .000 | .000       | .921       |

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(888) 247-8602

File Name : 4\_US 29 & Greene Edge Ln AM  
Site Code :  
Start Date : 4/14/2021  
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Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Greene Edge Ln Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|--------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                    | Left | Peds | App. Total |            |
| 07:00 AM    | 0                | 422  | 1    | 0    | 423        | 152              | 0    | 0    | 152        | 1                        | 0    | 0    | 1          | 576        |
| 07:15 AM    | 0                | 456  | 2    | 0    | 458        | 145              | 0    | 0    | 145        | 0                        | 0    | 0    | 0          | 603        |
| 07:30 AM    | 0                | 480  | 1    | 0    | 481        | 167              | 0    | 0    | 167        | 0                        | 0    | 0    | 0          | 648        |
| 07:45 AM    | 0                | 390  | 4    | 0    | 394        | 160              | 1    | 0    | 161        | 0                        | 0    | 0    | 0          | 555        |
| Total       | 0                | 1748 | 8    | 0    | 1756       | 624              | 1    | 0    | 625        | 1                        | 0    | 0    | 1          | 2382       |
| 08:00 AM    | 0                | 384  | 4    | 0    | 388        | 158              | 1    | 0    | 159        | 0                        | 0    | 0    | 0          | 547        |
| 08:15 AM    | 0                | 368  | 4    | 0    | 372        | 160              | 0    | 0    | 160        | 0                        | 0    | 0    | 0          | 532        |
| 08:30 AM    | 0                | 365  | 3    | 0    | 368        | 157              | 0    | 0    | 157        | 0                        | 0    | 0    | 0          | 525        |
| 08:45 AM    | 0                | 306  | 3    | 0    | 309        | 182              | 0    | 0    | 182        | 0                        | 1    | 0    | 1          | 492        |
| Total       | 0                | 1423 | 14   | 0    | 1437       | 657              | 1    | 0    | 658        | 0                        | 1    | 0    | 1          | 2096       |
| Grand Total | 0                | 3171 | 22   | 0    | 3193       | 1281             | 2    | 0    | 1283       | 1                        | 1    | 0    | 2          | 4478       |
| Apprch %    | 0                | 99.3 | 0.7  | 0    |            | 99.8             | 0.2  | 0    |            | 50                       | 50   | 0    |            |            |
| Total %     | 0                | 70.8 | 0.5  | 0    | 71.3       | 28.6             | 0    | 0    | 28.7       | 0                        | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Greene Edge Ln<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-----------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                       | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                             |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                     |      |            |                             |      |            |            |
| 07:00 AM                                                   | 0                   | 422  | 1    | 423        | 152                 | 0    | 152        | 1                           | 0    | 1          | 576        |
| 07:15 AM                                                   | 0                   | 456  | 2    | 458        | 145                 | 0    | 145        | 0                           | 0    | 0          | 603        |
| 07:30 AM                                                   | 0                   | 480  | 1    | 481        | 167                 | 0    | 167        | 0                           | 0    | 0          | 648        |
| 07:45 AM                                                   | 0                   | 390  | 4    | 394        | 160                 | 1    | 161        | 0                           | 0    | 0          | 555        |
| Total Volume                                               | 0                   | 1748 | 8    | 1756       | 624                 | 1    | 625        | 1                           | 0    | 1          | 2382       |
| % App. Total                                               | 0                   | 99.5 | 0.5  |            | 99.8                | 0.2  |            | 100                         | 0    |            |            |
| PHF                                                        | .000                | .910 | .500 | .913       | .934                | .250 | .936       | .250                        | .000 | .250       | .919       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 4\_US 29 & Greene Edge Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Greene Edge Ln Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|--------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                    | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 185  | 4    | 0    | 189        | 356              | 1    | 0    | 357        | 0                        | 1    | 0    | 1          | 547        |
| 04:15 PM    | 0                | 212  | 4    | 0    | 216        | 436              | 0    | 0    | 436        | 0                        | 0    | 0    | 0          | 652        |
| 04:30 PM    | 0                | 250  | 6    | 0    | 256        | 409              | 0    | 0    | 409        | 0                        | 0    | 0    | 0          | 665        |
| 04:45 PM    | 0                | 206  | 3    | 0    | 209        | 453              | 0    | 0    | 453        | 0                        | 0    | 0    | 0          | 662        |
| Total       | 0                | 853  | 17   | 0    | 870        | 1654             | 1    | 0    | 1655       | 0                        | 1    | 0    | 1          | 2526       |
| 05:00 PM    | 0                | 197  | 4    | 0    | 201        | 421              | 1    | 0    | 422        | 0                        | 0    | 0    | 0          | 623        |
| 05:15 PM    | 1                | 201  | 3    | 0    | 205        | 474              | 0    | 0    | 474        | 0                        | 0    | 0    | 0          | 679        |
| 05:30 PM    | 0                | 209  | 4    | 0    | 213        | 426              | 0    | 0    | 426        | 0                        | 1    | 0    | 1          | 640        |
| 05:45 PM    | 0                | 213  | 3    | 0    | 216        | 405              | 1    | 0    | 406        | 0                        | 0    | 0    | 0          | 622        |
| Total       | 1                | 820  | 14   | 0    | 835        | 1726             | 2    | 0    | 1728       | 0                        | 1    | 0    | 1          | 2564       |
| Grand Total | 1                | 1673 | 31   | 0    | 1705       | 3380             | 3    | 0    | 3383       | 0                        | 2    | 0    | 2          | 5090       |
| Apprch %    | 0.1              | 98.1 | 1.8  | 0    |            | 99.9             | 0.1  | 0    |            | 0                        | 100  | 0    |            |            |
| Total %     | 0                | 32.9 | 0.6  | 0    | 33.5       | 66.4             | 0.1  | 0    | 66.5       | 0                        | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Greene Edge Ln<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-----------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                       | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                             |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                     |      |            |                             |      |            |            |
| 04:30 PM                                                   | 0                   | 250  | 6    | 256        | 409                 | 0    | 409        | 0                           | 0    | 0          | 665        |
| 04:45 PM                                                   | 0                   | 206  | 3    | 209        | 453                 | 0    | 453        | 0                           | 0    | 0          | 662        |
| 05:00 PM                                                   | 0                   | 197  | 4    | 201        | 421                 | 1    | 422        | 0                           | 0    | 0          | 623        |
| 05:15 PM                                                   | 1                   | 201  | 3    | 205        | 474                 | 0    | 474        | 0                           | 0    | 0          | 679        |
| Total Volume                                               | 1                   | 854  | 16   | 871        | 1757                | 1    | 1758       | 0                           | 0    | 0          | 2629       |
| % App. Total                                               | 0.1                 | 98   | 1.8  |            | 99.9                | 0.1  |            | 0                           | 0    |            |            |
| PHF                                                        | .250                | .854 | .667 | .851       | .927                | .250 | .927       | .000                        | .000 | .000       | .968       |

Peggy Malone & Associates  
(888) 247-8602

File Name : 4\_US 29 & Greene Edge Ln PM  
Site Code :  
Start Date : 4/14/2021  
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Groups Printed- Trucks

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Greene Edge Ln Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|--------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                    | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 12   | 0    | 0    | 12         | 13               | 0    | 0    | 13         | 0                        | 0    | 0    | 0          | 25         |
| 04:15 PM    | 0                | 13   | 1    | 0    | 14         | 12               | 0    | 0    | 12         | 0                        | 0    | 0    | 0          | 26         |
| 04:30 PM    | 0                | 7    | 0    | 0    | 7          | 10               | 0    | 0    | 10         | 0                        | 0    | 0    | 0          | 17         |
| 04:45 PM    | 0                | 13   | 0    | 0    | 13         | 9                | 0    | 0    | 9          | 0                        | 0    | 0    | 0          | 22         |
| Total       | 0                | 45   | 1    | 0    | 46         | 44               | 0    | 0    | 44         | 0                        | 0    | 0    | 0          | 90         |
| 05:00 PM    | 0                | 3    | 0    | 0    | 3          | 7                | 0    | 0    | 7          | 0                        | 0    | 0    | 0          | 10         |
| 05:15 PM    | 0                | 6    | 0    | 0    | 6          | 7                | 0    | 0    | 7          | 0                        | 0    | 0    | 0          | 13         |
| 05:30 PM    | 0                | 5    | 0    | 0    | 5          | 11               | 0    | 0    | 11         | 0                        | 0    | 0    | 0          | 16         |
| 05:45 PM    | 0                | 4    | 0    | 0    | 4          | 6                | 0    | 0    | 6          | 0                        | 0    | 0    | 0          | 10         |
| Total       | 0                | 18   | 0    | 0    | 18         | 31               | 0    | 0    | 31         | 0                        | 0    | 0    | 0          | 49         |
| Grand Total | 0                | 63   | 1    | 0    | 64         | 75               | 0    | 0    | 75         | 0                        | 0    | 0    | 0          | 139        |
| Apprch %    | 0                | 98.4 | 1.6  | 0    |            | 100              | 0    | 0    |            | 0                        | 0    | 0    |            |            |
| Total %     | 0                | 45.3 | 0.7  | 0    | 46         | 54               | 0    | 0    | 54         | 0                        | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Greene Edge Ln<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-----------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                       | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                             |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                     |      |            |                             |      |            |            |
| 04:00 PM                                                   | 0                   | 12   | 0    | 12         | 13                  | 0    | 13         | 0                           | 0    | 0          | 25         |
| 04:15 PM                                                   | 0                   | 13   | 1    | 14         | 12                  | 0    | 12         | 0                           | 0    | 0          | 26         |
| 04:30 PM                                                   | 0                   | 7    | 0    | 7          | 10                  | 0    | 10         | 0                           | 0    | 0          | 17         |
| 04:45 PM                                                   | 0                   | 13   | 0    | 13         | 9                   | 0    | 9          | 0                           | 0    | 0          | 22         |
| Total Volume                                               | 0                   | 45   | 1    | 46         | 44                  | 0    | 44         | 0                           | 0    | 0          | 90         |
| % App. Total                                               | 0                   | 97.8 | 2.2  |            | 100                 | 0    |            | 0                           | 0    |            |            |
| PHF                                                        | .000                | .865 | .250 | .821       | .846                | .000 | .846       | .000                        | .000 | .000       | .865       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 4\_US 29 & Greene Edge Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Greene Edge Ln Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|--------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                    | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 197  | 4    | 0    | 201        | 369              | 1    | 0    | 370        | 0                        | 1    | 0    | 1          | 572        |
| 04:15 PM    | 0                | 225  | 5    | 0    | 230        | 448              | 0    | 0    | 448        | 0                        | 0    | 0    | 0          | 678        |
| 04:30 PM    | 0                | 257  | 6    | 0    | 263        | 419              | 0    | 0    | 419        | 0                        | 0    | 0    | 0          | 682        |
| 04:45 PM    | 0                | 219  | 3    | 0    | 222        | 462              | 0    | 0    | 462        | 0                        | 0    | 0    | 0          | 684        |
| Total       | 0                | 898  | 18   | 0    | 916        | 1698             | 1    | 0    | 1699       | 0                        | 1    | 0    | 1          | 2616       |
| 05:00 PM    | 0                | 200  | 4    | 0    | 204        | 428              | 1    | 0    | 429        | 0                        | 0    | 0    | 0          | 633        |
| 05:15 PM    | 1                | 207  | 3    | 0    | 211        | 481              | 0    | 0    | 481        | 0                        | 0    | 0    | 0          | 692        |
| 05:30 PM    | 0                | 214  | 4    | 0    | 218        | 437              | 0    | 0    | 437        | 0                        | 1    | 0    | 1          | 656        |
| 05:45 PM    | 0                | 217  | 3    | 0    | 220        | 411              | 1    | 0    | 412        | 0                        | 0    | 0    | 0          | 632        |
| Total       | 1                | 838  | 14   | 0    | 853        | 1757             | 2    | 0    | 1759       | 0                        | 1    | 0    | 1          | 2613       |
| Grand Total | 1                | 1736 | 32   | 0    | 1769       | 3455             | 3    | 0    | 3458       | 0                        | 2    | 0    | 2          | 5229       |
| Apprch %    | 0.1              | 98.1 | 1.8  | 0    |            | 99.9             | 0.1  | 0    |            | 0                        | 100  | 0    |            |            |
| Total %     | 0                | 33.2 | 0.6  | 0    | 33.8       | 66.1             | 0.1  | 0    | 66.1       | 0                        | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Greene Edge Ln<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-----------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                       | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                             |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                     |      |            |                             |      |            |            |
| 04:30 PM                                                   | 0                   | 257  | 6    | 263        | 419                 | 0    | 419        | 0                           | 0    | 0          | 682        |
| 04:45 PM                                                   | 0                   | 219  | 3    | 222        | 462                 | 0    | 462        | 0                           | 0    | 0          | 684        |
| 05:00 PM                                                   | 0                   | 200  | 4    | 204        | 428                 | 1    | 429        | 0                           | 0    | 0          | 633        |
| 05:15 PM                                                   | 1                   | 207  | 3    | 211        | 481                 | 0    | 481        | 0                           | 0    | 0          | 692        |
| Total Volume                                               | 1                   | 883  | 16   | 900        | 1790                | 1    | 1791       | 0                           | 0    | 0          | 2691       |
| % App. Total                                               | 0.1                 | 98.1 | 1.8  |            | 99.9                | 0.1  |            | 0                           | 0    |            |            |
| PHF                                                        | .250                | .859 | .667 | .856       | .930                | .250 | .931       | .000                        | .000 | .000       | .972       |

# Peggy Malone & Associates

(800) 247-8602

File Name : 3-Seminole Trail and Frays Mill Rd AM  
 Site Code :  
 Start Date : 3/27/2018  
 Page No : 1

Groups Printed- Car

|             | Route 29<br>Southbound |      |      |      |            | Frays Mill Rd<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Frays Mill Rd<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Int. Total |
| 06:00 AM    | 0                      | 235  | 1    | 0    | 236        | 1                          | 0    | 3    | 0    | 4          | 0                      | 47   | 1    | 0    | 48         | 15                         | 0    | 0    | 0    | 15         | 303        |
| 06:15 AM    | 1                      | 279  | 3    | 0    | 283        | 4                          | 0    | 17   | 0    | 21         | 1                      | 73   | 1    | 0    | 75         | 13                         | 0    | 2    | 0    | 15         | 394        |
| 06:30 AM    | 2                      | 381  | 1    | 0    | 384        | 4                          | 0    | 12   | 0    | 16         | 1                      | 67   | 2    | 0    | 70         | 13                         | 0    | 1    | 0    | 14         | 484        |
| 06:45 AM    | 3                      | 436  | 4    | 0    | 443        | 3                          | 0    | 17   | 0    | 20         | 1                      | 83   | 0    | 0    | 84         | 28                         | 1    | 3    | 0    | 32         | 579        |
| Total       | 6                      | 1331 | 9    | 0    | 1346       | 12                         | 0    | 49   | 0    | 61         | 3                      | 270  | 4    | 0    | 277        | 69                         | 1    | 6    | 0    | 76         | 1760       |
| 07:00 AM    | 1                      | 478  | 6    | 0    | 485        | 5                          | 1    | 24   | 0    | 30         | 2                      | 130  | 1    | 0    | 133        | 34                         | 0    | 0    | 0    | 34         | 682        |
| 07:15 AM    | 3                      | 494  | 8    | 0    | 505        | 11                         | 1    | 27   | 0    | 39         | 8                      | 135  | 4    | 0    | 147        | 46                         | 2    | 2    | 0    | 50         | 741        |
| 07:30 AM    | 6                      | 549  | 11   | 0    | 566        | 8                          | 4    | 41   | 0    | 53         | 6                      | 112  | 1    | 0    | 119        | 52                         | 2    | 5    | 0    | 59         | 797        |
| 07:45 AM    | 4                      | 392  | 8    | 0    | 404        | 11                         | 1    | 39   | 0    | 51         | 5                      | 137  | 2    | 0    | 144        | 63                         | 4    | 2    | 0    | 69         | 668        |
| Total       | 14                     | 1913 | 33   | 0    | 1960       | 35                         | 7    | 131  | 0    | 173        | 21                     | 514  | 8    | 0    | 543        | 195                        | 8    | 9    | 0    | 212        | 2888       |
| Grand Total | 20                     | 3244 | 42   | 0    | 3306       | 47                         | 7    | 180  | 0    | 234        | 24                     | 784  | 12   | 0    | 820        | 264                        | 9    | 15   | 0    | 288        | 4648       |
| Apprch %    | 0.6                    | 98.1 | 1.3  | 0    |            | 20.1                       | 3    | 76.9 | 0    |            | 2.9                    | 95.6 | 1.5  | 0    |            | 91.7                       | 3.1  | 5.2  | 0    |            |            |
| Total %     | 0.4                    | 69.8 | 0.9  | 0    | 71.1       | 1                          | 0.2  | 3.9  | 0    | 5          | 0.5                    | 16.9 | 0.3  | 0    | 17.6       | 5.7                        | 0.2  | 0.3  | 0    | 6.2        |            |

|                                                            | Route 29<br>Southbound |      |      |            | Frays Mill Rd<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Frays Mill Rd<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 06:00 AM to 07:45 AM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                            |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                            |      |      |            |            |
| 07:00 AM                                                   | 1                      | 478  | 6    | 485        | 5                          | 1    | 24   | 30         | 2                      | 130  | 1    | 133        | 34                         | 0    | 0    | 34         | 682        |
| 07:15 AM                                                   | 3                      | 494  | 8    | 505        | 11                         | 1    | 27   | 39         | 8                      | 135  | 4    | 147        | 46                         | 2    | 2    | 50         | 741        |
| 07:30 AM                                                   | 6                      | 549  | 11   | 566        | 8                          | 4    | 41   | 53         | 6                      | 112  | 1    | 119        | 52                         | 2    | 5    | 59         | 797        |
| 07:45 AM                                                   | 4                      | 392  | 8    | 404        | 11                         | 1    | 39   | 51         | 5                      | 137  | 2    | 144        | 63                         | 4    | 2    | 69         | 668        |
| Total Volume                                               | 14                     | 1913 | 33   | 1960       | 35                         | 7    | 131  | 173        | 21                     | 514  | 8    | 543        | 195                        | 8    | 9    | 212        | 2888       |
| % App. Total                                               | 0.7                    | 97.6 | 1.7  |            | 20.2                       | 4    | 75.7 |            | 3.9                    | 94.7 | 1.5  |            | 92                         | 3.8  | 4.2  |            |            |
| PHF                                                        | .583                   | .871 | .750 | .866       | .795                       | .438 | .799 | .816       | .656                   | .938 | .500 | .923       | .774                       | .500 | .450 | .768       | .906       |

# Peggy Malone & Associates

(800) 247-8602

File Name : 3-Seminole Trail and Frays Mill Rd AM  
 Site Code :  
 Start Date : 3/27/2018  
 Page No : 1

Groups Printed- Truck

|             | Route 29<br>Southbound |      |      |      |            | Frays Mill Rd<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Frays Mill Rd<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Int. Total |
| 06:00 AM    | 0                      | 18   | 0    | 0    | 18         | 0                          | 0    | 0    | 0    | 0          | 1                      | 3    | 0    | 0    | 4          | 0                          | 0    | 0    | 0    | 0          | 22         |
| 06:15 AM    | 0                      | 12   | 0    | 0    | 12         | 1                          | 0    | 0    | 0    | 1          | 0                      | 8    | 0    | 0    | 8          | 0                          | 0    | 0    | 0    | 0          | 21         |
| 06:30 AM    | 0                      | 7    | 0    | 0    | 7          | 1                          | 0    | 0    | 0    | 1          | 1                      | 7    | 0    | 0    | 8          | 0                          | 1    | 0    | 0    | 1          | 17         |
| 06:45 AM    | 0                      | 5    | 0    | 0    | 5          | 0                          | 0    | 0    | 0    | 0          | 0                      | 14   | 0    | 0    | 14         | 0                          | 0    | 0    | 0    | 0          | 19         |
| Total       | 0                      | 42   | 0    | 0    | 42         | 2                          | 0    | 0    | 0    | 2          | 2                      | 32   | 0    | 0    | 34         | 0                          | 1    | 0    | 0    | 1          | 79         |
| 07:00 AM    | 0                      | 14   | 1    | 0    | 15         | 0                          | 1    | 0    | 0    | 1          | 0                      | 14   | 0    | 0    | 14         | 0                          | 0    | 0    | 0    | 0          | 30         |
| 07:15 AM    | 0                      | 13   | 0    | 0    | 13         | 0                          | 0    | 1    | 0    | 1          | 0                      | 14   | 0    | 0    | 14         | 0                          | 0    | 0    | 0    | 0          | 28         |
| 07:30 AM    | 0                      | 15   | 1    | 0    | 16         | 1                          | 0    | 0    | 0    | 1          | 0                      | 22   | 1    | 0    | 23         | 0                          | 0    | 0    | 0    | 0          | 40         |
| 07:45 AM    | 0                      | 9    | 0    | 0    | 9          | 0                          | 0    | 0    | 0    | 0          | 4                      | 12   | 0    | 0    | 16         | 0                          | 0    | 2    | 0    | 2          | 27         |
| Total       | 0                      | 51   | 2    | 0    | 53         | 1                          | 1    | 1    | 0    | 3          | 4                      | 62   | 1    | 0    | 67         | 0                          | 0    | 2    | 0    | 2          | 125        |
| Grand Total | 0                      | 93   | 2    | 0    | 95         | 3                          | 1    | 1    | 0    | 5          | 6                      | 94   | 1    | 0    | 101        | 0                          | 1    | 2    | 0    | 3          | 204        |
| Apprch %    | 0                      | 97.9 | 2.1  | 0    |            | 60                         | 20   | 20   | 0    |            | 5.9                    | 93.1 | 1    | 0    |            | 0                          | 33.3 | 66.7 | 0    |            |            |
| Total %     | 0                      | 45.6 | 1    | 0    | 46.6       | 1.5                        | 0.5  | 0.5  | 0    | 2.5        | 2.9                    | 46.1 | 0.5  | 0    | 49.5       | 0                          | 0.5  | 1    | 0    | 1.5        |            |

|                                                            | Route 29<br>Southbound |           |          |            | Frays Mill Rd<br>Westbound |          |          |            | Route 29<br>Northbound |           |          |            | Frays Mill Rd<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|------------------------|-----------|----------|------------|----------------------------|----------|----------|------------|------------------------|-----------|----------|------------|----------------------------|------|----------|------------|------------|
| Start Time                                                 | Right                  | Thru      | Left     | App. Total | Right                      | Thru     | Left     | App. Total | Right                  | Thru      | Left     | App. Total | Right                      | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 06:00 AM to 07:45 AM - Peak 1 of 1 |                        |           |          |            |                            |          |          |            |                        |           |          |            |                            |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                        |           |          |            |                            |          |          |            |                        |           |          |            |                            |      |          |            |            |
| 07:00 AM                                                   | 0                      | 14        | <b>1</b> | 15         | 0                          | <b>1</b> | 0        | <b>1</b>   | 0                      | 14        | 0        | 14         | 0                          | 0    | 0        | 0          | 30         |
| 07:15 AM                                                   | 0                      | 13        | 0        | 13         | 0                          | 0        | <b>1</b> | 1          | 0                      | 14        | 0        | 14         | 0                          | 0    | 0        | 0          | 28         |
| 07:30 AM                                                   | 0                      | <b>15</b> | 1        | <b>16</b>  | <b>1</b>                   | 0        | 0        | 1          | 0                      | <b>22</b> | <b>1</b> | <b>23</b>  | 0                          | 0    | 0        | 0          | <b>40</b>  |
| 07:45 AM                                                   | 0                      | 9         | 0        | 9          | 0                          | 0        | 0        | 0          | <b>4</b>               | 12        | 0        | 16         | 0                          | 0    | <b>2</b> | <b>2</b>   | 27         |
| Total Volume                                               | 0                      | 51        | 2        | 53         | 1                          | 1        | 1        | 3          | 4                      | 62        | 1        | 67         | 0                          | 0    | 2        | 2          | 125        |
| % App. Total                                               | 0                      | 96.2      | 3.8      |            | 33.3                       | 33.3     | 33.3     |            | 6                      | 92.5      | 1.5      |            | 0                          | 0    | 100      |            |            |
| PHF                                                        | .000                   | .850      | .500     | .828       | .250                       | .250     | .250     | .750       | .250                   | .705      | .250     | .728       | .000                       | .000 | .250     | .250       | .781       |

# Peggy Malone & Associates

(800) 247-8602

File Name : 3-Seminole Trail and Frays Mill Rd AM  
 Site Code :  
 Start Date : 3/27/2018  
 Page No : 1

Groups Printed- Combined

|             | Route 29<br>Southbound |      |      |      |            | Frays Mill Rd<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Frays Mill Rd<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Int. Total |
| 06:00 AM    | 0                      | 253  | 1    | 0    | 254        | 1                          | 0    | 3    | 0    | 4          | 1                      | 50   | 1    | 0    | 52         | 15                         | 0    | 0    | 0    | 15         | 325        |
| 06:15 AM    | 1                      | 291  | 3    | 0    | 295        | 5                          | 0    | 17   | 0    | 22         | 1                      | 81   | 1    | 0    | 83         | 13                         | 0    | 2    | 0    | 15         | 415        |
| 06:30 AM    | 2                      | 388  | 1    | 0    | 391        | 5                          | 0    | 12   | 0    | 17         | 2                      | 74   | 2    | 0    | 78         | 13                         | 1    | 1    | 0    | 15         | 501        |
| 06:45 AM    | 3                      | 441  | 4    | 0    | 448        | 3                          | 0    | 17   | 0    | 20         | 1                      | 97   | 0    | 0    | 98         | 28                         | 1    | 3    | 0    | 32         | 598        |
| Total       | 6                      | 1373 | 9    | 0    | 1388       | 14                         | 0    | 49   | 0    | 63         | 5                      | 302  | 4    | 0    | 311        | 69                         | 2    | 6    | 0    | 77         | 1839       |
| 07:00 AM    | 1                      | 492  | 7    | 0    | 500        | 5                          | 2    | 24   | 0    | 31         | 2                      | 144  | 1    | 0    | 147        | 34                         | 0    | 0    | 0    | 34         | 712        |
| 07:15 AM    | 3                      | 507  | 8    | 0    | 518        | 11                         | 1    | 28   | 0    | 40         | 8                      | 149  | 4    | 0    | 161        | 46                         | 2    | 2    | 0    | 50         | 769        |
| 07:30 AM    | 6                      | 564  | 12   | 0    | 582        | 9                          | 4    | 41   | 0    | 54         | 6                      | 134  | 2    | 0    | 142        | 52                         | 2    | 5    | 0    | 59         | 837        |
| 07:45 AM    | 4                      | 401  | 8    | 0    | 413        | 11                         | 1    | 39   | 0    | 51         | 9                      | 149  | 2    | 0    | 160        | 63                         | 4    | 4    | 0    | 71         | 695        |
| Total       | 14                     | 1964 | 35   | 0    | 2013       | 36                         | 8    | 132  | 0    | 176        | 25                     | 576  | 9    | 0    | 610        | 195                        | 8    | 11   | 0    | 214        | 3013       |
| Grand Total | 20                     | 3337 | 44   | 0    | 3401       | 50                         | 8    | 181  | 0    | 239        | 30                     | 878  | 13   | 0    | 921        | 264                        | 10   | 17   | 0    | 291        | 4852       |
| Apprch %    | 0.6                    | 98.1 | 1.3  | 0    |            | 20.9                       | 3.3  | 75.7 | 0    |            | 3.3                    | 95.3 | 1.4  | 0    |            | 90.7                       | 3.4  | 5.8  | 0    |            |            |
| Total %     | 0.4                    | 68.8 | 0.9  | 0    | 70.1       | 1                          | 0.2  | 3.7  | 0    | 4.9        | 0.6                    | 18.1 | 0.3  | 0    | 19         | 5.4                        | 0.2  | 0.4  | 0    | 6          |            |

|                                                            | Route 29<br>Southbound |      |      |            | Frays Mill Rd<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Frays Mill Rd<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 06:00 AM to 07:45 AM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                            |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                            |      |      |            |            |
| 07:00 AM                                                   | 1                      | 492  | 7    | 500        | 5                          | 2    | 24   | 31         | 2                      | 144  | 1    | 147        | 34                         | 0    | 0    | 34         | 712        |
| 07:15 AM                                                   | 3                      | 507  | 8    | 518        | 11                         | 1    | 28   | 40         | 8                      | 149  | 4    | 161        | 46                         | 2    | 2    | 50         | 769        |
| 07:30 AM                                                   | 6                      | 564  | 12   | 582        | 9                          | 4    | 41   | 54         | 6                      | 134  | 2    | 142        | 52                         | 2    | 5    | 59         | 837        |
| 07:45 AM                                                   | 4                      | 401  | 8    | 413        | 11                         | 1    | 39   | 51         | 9                      | 149  | 2    | 160        | 63                         | 4    | 4    | 71         | 695        |
| Total Volume                                               | 14                     | 1964 | 35   | 2013       | 36                         | 8    | 132  | 176        | 25                     | 576  | 9    | 610        | 195                        | 8    | 11   | 214        | 3013       |
| % App. Total                                               | 0.7                    | 97.6 | 1.7  |            | 20.5                       | 4.5  | 75   |            | 4.1                    | 94.4 | 1.5  |            | 91.1                       | 3.7  | 5.1  |            |            |
| PHF                                                        | .583                   | .871 | .729 | .865       | .818                       | .500 | .805 | .815       | .694                   | .966 | .563 | .947       | .774                       | .500 | .550 | .754       | .900       |

# Peggy Malone & Associates

## (800) 247-8602

File Name : 3-Seminole Trail and Frays Mill Rd PM

Site Code :

Start Date : 3/27/2018

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Groups Printed- Car

|             | Route 29<br>Southbound |      |      |      |            | Frays Mill Rd<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Frays Mill Rd<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                      | 204  | 4    | 0    | 208        | 10                         | 1    | 13   | 0    | 24         | 24                     | 403  | 17   | 0    | 444        | 8                          | 3    | 2    | 0    | 13         | 689        |
| 04:15 PM    | 1                      | 201  | 10   | 0    | 212        | 10                         | 1    | 2    | 0    | 13         | 20                     | 400  | 30   | 0    | 450        | 12                         | 2    | 4    | 0    | 18         | 693        |
| 04:30 PM    | 2                      | 223  | 7    | 0    | 232        | 8                          | 0    | 5    | 0    | 13         | 24                     | 490  | 28   | 0    | 542        | 9                          | 0    | 3    | 0    | 12         | 799        |
| 04:45 PM    | 3                      | 219  | 10   | 0    | 232        | 13                         | 1    | 7    | 0    | 21         | 26                     | 485  | 41   | 0    | 552        | 8                          | 3    | 6    | 0    | 17         | 822        |
| Total       | 6                      | 847  | 31   | 0    | 884        | 41                         | 3    | 27   | 0    | 71         | 94                     | 1778 | 116  | 0    | 1988       | 37                         | 8    | 15   | 0    | 60         | 3003       |
| 05:00 PM    | 1                      | 246  | 5    | 0    | 252        | 13                         | 2    | 7    | 0    | 22         | 22                     | 433  | 22   | 0    | 477        | 10                         | 4    | 6    | 0    | 20         | 771        |
| 05:15 PM    | 3                      | 212  | 8    | 0    | 223        | 21                         | 3    | 9    | 0    | 33         | 27                     | 493  | 32   | 0    | 552        | 11                         | 1    | 3    | 0    | 15         | 823        |
| 05:30 PM    | 1                      | 198  | 10   | 0    | 209        | 19                         | 2    | 9    | 0    | 30         | 32                     | 515  | 25   | 0    | 572        | 4                          | 2    | 1    | 0    | 7          | 818        |
| 05:45 PM    | 3                      | 175  | 5    | 0    | 183        | 16                         | 1    | 9    | 0    | 26         | 33                     | 402  | 23   | 0    | 458        | 5                          | 0    | 1    | 0    | 6          | 673        |
| Total       | 8                      | 831  | 28   | 0    | 867        | 69                         | 8    | 34   | 0    | 111        | 114                    | 1843 | 102  | 0    | 2059       | 30                         | 7    | 11   | 0    | 48         | 3085       |
| Grand Total | 14                     | 1678 | 59   | 0    | 1751       | 110                        | 11   | 61   | 0    | 182        | 208                    | 3621 | 218  | 0    | 4047       | 67                         | 15   | 26   | 0    | 108        | 6088       |
| Apprch %    | 0.8                    | 95.8 | 3.4  | 0    |            | 60.4                       | 6    | 33.5 | 0    |            | 5.1                    | 89.5 | 5.4  | 0    |            | 62                         | 13.9 | 24.1 | 0    |            |            |
| Total %     | 0.2                    | 27.6 | 1    | 0    | 28.8       | 1.8                        | 0.2  | 1    | 0    | 3          | 3.4                    | 59.5 | 3.6  | 0    | 66.5       | 1.1                        | 0.2  | 0.4  | 0    | 1.8        |            |

|                                                            | Route 29<br>Southbound |      |      |            | Frays Mill Rd<br>Westbound |      |      |            | Route 29<br>Northbound |      |      |            | Frays Mill Rd<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------------------|------|------|------------|----------------------------|------|------|------------|------------|
| Start Time                                                 | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Right                      | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                        |      |      |            |                            |      |      |            |                        |      |      |            |                            |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:45 PM       |                        |      |      |            |                            |      |      |            |                        |      |      |            |                            |      |      |            |            |
| 04:45 PM                                                   | 3                      | 219  | 10   | 232        | 13                         | 1    | 7    | 21         | 26                     | 485  | 41   | 552        | 8                          | 3    | 6    | 17         | 822        |
| 05:00 PM                                                   | 1                      | 246  | 5    | 252        | 13                         | 2    | 7    | 22         | 22                     | 433  | 22   | 477        | 10                         | 4    | 6    | 20         | 771        |
| 05:15 PM                                                   | 3                      | 212  | 8    | 223        | 21                         | 3    | 9    | 33         | 27                     | 493  | 32   | 552        | 11                         | 1    | 3    | 15         | 823        |
| 05:30 PM                                                   | 1                      | 198  | 10   | 209        | 19                         | 2    | 9    | 30         | 32                     | 515  | 25   | 572        | 4                          | 2    | 1    | 7          | 818        |
| Total Volume                                               | 8                      | 875  | 33   | 916        | 66                         | 8    | 32   | 106        | 107                    | 1926 | 120  | 2153       | 33                         | 10   | 16   | 59         | 3234       |
| % App. Total                                               | 0.9                    | 95.5 | 3.6  |            | 62.3                       | 7.5  | 30.2 |            | 5                      | 89.5 | 5.6  |            | 55.9                       | 16.9 | 27.1 |            |            |
| PHF                                                        | .667                   | .889 | .825 | .909       | .786                       | .667 | .889 | .803       | .836                   | .935 | .732 | .941       | .750                       | .625 | .667 | .738       | .982       |

# Peggy Malone & Associates

(800) 247-8602

File Name : 3-Seminole Trail and Frays Mill Rd PM  
 Site Code :  
 Start Date : 3/27/2018  
 Page No : 1

Groups Printed- Truck

|             | Route 29<br>Southbound |      |      |      |            | Frays Mill Rd<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Frays Mill Rd<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                      | 14   | 0    | 0    | 14         | 0                          | 0    | 0    | 0    | 0          | 1                      | 8    | 0    | 0    | 9          | 0                          | 0    | 1    | 0    | 1          | 24         |
| 04:15 PM    | 0                      | 12   | 0    | 0    | 12         | 1                          | 0    | 0    | 0    | 1          | 4                      | 14   | 0    | 0    | 18         | 0                          | 0    | 0    | 0    | 0          | 31         |
| 04:30 PM    | 0                      | 6    | 0    | 0    | 6          | 0                          | 0    | 1    | 0    | 1          | 2                      | 12   | 2    | 0    | 16         | 0                          | 0    | 0    | 0    | 0          | 23         |
| 04:45 PM    | 0                      | 11   | 0    | 0    | 11         | 1                          | 1    | 1    | 0    | 3          | 0                      | 6    | 0    | 0    | 6          | 0                          | 0    | 0    | 0    | 0          | 20         |
| Total       | 0                      | 43   | 0    | 0    | 43         | 2                          | 1    | 2    | 0    | 5          | 7                      | 40   | 2    | 0    | 49         | 0                          | 0    | 1    | 0    | 1          | 98         |
| 05:00 PM    | 0                      | 5    | 0    | 0    | 5          | 0                          | 0    | 1    | 0    | 1          | 0                      | 12   | 1    | 0    | 13         | 1                          | 1    | 0    | 0    | 2          | 21         |
| 05:15 PM    | 0                      | 7    | 0    | 0    | 7          | 0                          | 0    | 0    | 0    | 0          | 0                      | 9    | 0    | 0    | 9          | 0                          | 0    | 0    | 0    | 0          | 16         |
| 05:30 PM    | 0                      | 9    | 0    | 0    | 9          | 0                          | 0    | 0    | 0    | 0          | 0                      | 7    | 0    | 0    | 7          | 0                          | 0    | 0    | 0    | 0          | 16         |
| 05:45 PM    | 0                      | 6    | 0    | 0    | 6          | 0                          | 0    | 0    | 0    | 0          | 0                      | 6    | 0    | 0    | 6          | 0                          | 0    | 0    | 0    | 0          | 12         |
| Total       | 0                      | 27   | 0    | 0    | 27         | 0                          | 0    | 1    | 0    | 1          | 0                      | 34   | 1    | 0    | 35         | 1                          | 1    | 0    | 0    | 2          | 65         |
| Grand Total | 0                      | 70   | 0    | 0    | 70         | 2                          | 1    | 3    | 0    | 6          | 7                      | 74   | 3    | 0    | 84         | 1                          | 1    | 1    | 0    | 3          | 163        |
| Apprch %    | 0                      | 100  | 0    | 0    |            | 33.3                       | 16.7 | 50   | 0    |            | 8.3                    | 88.1 | 3.6  | 0    |            | 33.3                       | 33.3 | 33.3 | 0    |            |            |
| Total %     | 0                      | 42.9 | 0    | 0    | 42.9       | 1.2                        | 0.6  | 1.8  | 0    | 3.7        | 4.3                    | 45.4 | 1.8  | 0    | 51.5       | 0.6                        | 0.6  | 0.6  | 0    | 1.8        |            |

|                                                            | Route 29<br>Southbound |           |      |            | Frays Mill Rd<br>Westbound |          |          |            | Route 29<br>Northbound |           |          |            | Frays Mill Rd<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|------------------------|-----------|------|------------|----------------------------|----------|----------|------------|------------------------|-----------|----------|------------|----------------------------|------|----------|------------|------------|
| Start Time                                                 | Right                  | Thru      | Left | App. Total | Right                      | Thru     | Left     | App. Total | Right                  | Thru      | Left     | App. Total | Right                      | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                        |           |      |            |                            |          |          |            |                        |           |          |            |                            |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                        |           |      |            |                            |          |          |            |                        |           |          |            |                            |      |          |            |            |
| 04:00 PM                                                   | 0                      | <b>14</b> | 0    | <b>14</b>  | 0                          | 0        | 0        | 0          | 1                      | 8         | 0        | 9          | 0                          | 0    | <b>1</b> | <b>1</b>   | 24         |
| 04:15 PM                                                   | 0                      | 12        | 0    | 12         | <b>1</b>                   | 0        | 0        | 1          | <b>4</b>               | <b>14</b> | 0        | <b>18</b>  | 0                          | 0    | 0        | 0          | <b>31</b>  |
| 04:30 PM                                                   | 0                      | 6         | 0    | 6          | 0                          | 0        | <b>1</b> | 1          | 2                      | 12        | <b>2</b> | 16         | 0                          | 0    | 0        | 0          | 23         |
| 04:45 PM                                                   | 0                      | 11        | 0    | 11         | 1                          | <b>1</b> | 1        | <b>3</b>   | 0                      | 6         | 0        | 6          | 0                          | 0    | 0        | 0          | 20         |
| Total Volume                                               | 0                      | 43        | 0    | 43         | 2                          | 1        | 2        | 5          | 7                      | 40        | 2        | 49         | 0                          | 0    | 1        | 1          | 98         |
| % App. Total                                               | 0                      | 100       | 0    |            | 40                         | 20       | 40       |            | 14.3                   | 81.6      | 4.1      |            | 0                          | 0    | 100      |            |            |
| PHF                                                        | .000                   | .768      | .000 | .768       | .500                       | .250     | .500     | .417       | .438                   | .714      | .250     | .681       | .000                       | .000 | .250     | .250       | .790       |

# Peggy Malone & Associates

(800) 247-8602

File Name : 3-Seminole Trail and Frays Mill Rd PM  
 Site Code :  
 Start Date : 3/27/2018  
 Page No : 1

Groups Printed- Combined

|             | Route 29<br>Southbound |      |      |      |            | Frays Mill Rd<br>Westbound |      |      |      |            | Route 29<br>Northbound |      |      |      |            | Frays Mill Rd<br>Eastbound |      |      |      |            |            |
|-------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------------------|------|------|------|------------|----------------------------|------|------|------|------------|------------|
| Start Time  | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Right                      | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                      | 218  | 4    | 0    | 222        | 10                         | 1    | 13   | 0    | 24         | 25                     | 411  | 17   | 0    | 453        | 8                          | 3    | 3    | 0    | 14         | 713        |
| 04:15 PM    | 1                      | 213  | 10   | 0    | 224        | 11                         | 1    | 2    | 0    | 14         | 24                     | 414  | 30   | 0    | 468        | 12                         | 2    | 4    | 0    | 18         | 724        |
| 04:30 PM    | 2                      | 229  | 7    | 0    | 238        | 8                          | 0    | 6    | 0    | 14         | 26                     | 502  | 30   | 0    | 558        | 9                          | 0    | 3    | 0    | 12         | 822        |
| 04:45 PM    | 3                      | 230  | 10   | 0    | 243        | 14                         | 2    | 8    | 0    | 24         | 26                     | 491  | 41   | 0    | 558        | 8                          | 3    | 6    | 0    | 17         | 842        |
| Total       | 6                      | 890  | 31   | 0    | 927        | 43                         | 4    | 29   | 0    | 76         | 101                    | 1818 | 118  | 0    | 2037       | 37                         | 8    | 16   | 0    | 61         | 3101       |
| 05:00 PM    | 1                      | 251  | 5    | 0    | 257        | 13                         | 2    | 8    | 0    | 23         | 22                     | 445  | 23   | 0    | 490        | 11                         | 5    | 6    | 0    | 22         | 792        |
| 05:15 PM    | 3                      | 219  | 8    | 0    | 230        | 21                         | 3    | 9    | 0    | 33         | 27                     | 502  | 32   | 0    | 561        | 11                         | 1    | 3    | 0    | 15         | 839        |
| 05:30 PM    | 1                      | 207  | 10   | 0    | 218        | 19                         | 2    | 9    | 0    | 30         | 32                     | 522  | 25   | 0    | 579        | 4                          | 2    | 1    | 0    | 7          | 834        |
| 05:45 PM    | 3                      | 181  | 5    | 0    | 189        | 16                         | 1    | 9    | 0    | 26         | 33                     | 408  | 23   | 0    | 464        | 5                          | 0    | 1    | 0    | 6          | 685        |
| Total       | 8                      | 858  | 28   | 0    | 894        | 69                         | 8    | 35   | 0    | 112        | 114                    | 1877 | 103  | 0    | 2094       | 31                         | 8    | 11   | 0    | 50         | 3150       |
| Grand Total | 14                     | 1748 | 59   | 0    | 1821       | 112                        | 12   | 64   | 0    | 188        | 215                    | 3695 | 221  | 0    | 4131       | 68                         | 16   | 27   | 0    | 111        | 6251       |
| Apprch %    | 0.8                    | 96   | 3.2  | 0    |            | 59.6                       | 6.4  | 34   | 0    |            | 5.2                    | 89.4 | 5.3  | 0    |            | 61.3                       | 14.4 | 24.3 | 0    |            |            |
| Total %     | 0.2                    | 28   | 0.9  | 0    | 29.1       | 1.8                        | 0.2  | 1    | 0    | 3          | 3.4                    | 59.1 | 3.5  | 0    | 66.1       | 1.1                        | 0.3  | 0.4  | 0    | 1.8        |            |

|                                                            | Route 29<br>Southbound |            |           |            |  | Frays Mill Rd<br>Westbound |          |          |            |  | Route 29<br>Northbound |            |           |            |  | Frays Mill Rd<br>Eastbound |          |          |            |  |            |
|------------------------------------------------------------|------------------------|------------|-----------|------------|--|----------------------------|----------|----------|------------|--|------------------------|------------|-----------|------------|--|----------------------------|----------|----------|------------|--|------------|
| Start Time                                                 | Right                  | Thru       | Left      | App. Total |  | Right                      | Thru     | Left     | App. Total |  | Right                  | Thru       | Left      | App. Total |  | Right                      | Thru     | Left     | App. Total |  | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                        |            |           |            |  |                            |          |          |            |  |                        |            |           |            |  |                            |          |          |            |  |            |
| Peak Hour for Entire Intersection Begins at 04:45 PM       |                        |            |           |            |  |                            |          |          |            |  |                        |            |           |            |  |                            |          |          |            |  |            |
| 04:45 PM                                                   | <b>3</b>               | 230        | <b>10</b> | 243        |  | 14                         | 2        | 8        | 24         |  | 26                     | 491        | <b>41</b> | 558        |  | 8                          | 3        | <b>6</b> | 17         |  | <b>842</b> |
| 05:00 PM                                                   | 1                      | <b>251</b> | 5         | <b>257</b> |  | 13                         | 2        | 8        | 23         |  | 22                     | 445        | 23        | 490        |  | <b>11</b>                  | <b>5</b> | 6        | <b>22</b>  |  | 792        |
| 05:15 PM                                                   | 3                      | 219        | 8         | 230        |  | <b>21</b>                  | <b>3</b> | <b>9</b> | <b>33</b>  |  | 27                     | 502        | 32        | 561        |  | 11                         | 1        | 3        | 15         |  | 839        |
| 05:30 PM                                                   | 1                      | 207        | 10        | 218        |  | 19                         | 2        | 9        | 30         |  | <b>32</b>              | <b>522</b> | 25        | <b>579</b> |  | 4                          | 2        | 1        | 7          |  | 834        |
| Total Volume                                               | 8                      | 907        | 33        | 948        |  | 67                         | 9        | 34       | 110        |  | 107                    | 1960       | 121       | 2188       |  | 34                         | 11       | 16       | 61         |  | 3307       |
| % App. Total                                               | 0.8                    | 95.7       | 3.5       |            |  | 60.9                       | 8.2      | 30.9     |            |  | 4.9                    | 89.6       | 5.5       |            |  | 55.7                       | 18       | 26.2     |            |  |            |
| PHF                                                        | .667                   | .903       | .825      | .922       |  | .798                       | .750     | .944     | .833       |  | .836                   | .939       | .738      | .945       |  | .773                       | .550     | .667     | .693       |  | .982       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 5\_US 29 & Dickerson Ln AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Private Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Dickerson Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                         | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                   | 461  | 0    | 0    | 462        | 0                             | 0    | 0    | 0    | 0          | 0                   | 122  | 1    | 0    | 123        | 2                         | 0    | 5    | 0    | 7          | 592        |
| 07:15 AM    | 4                   | 476  | 0    | 0    | 480        | 0                             | 0    | 1    | 0    | 1          | 0                   | 143  | 1    | 0    | 144        | 4                         | 0    | 2    | 0    | 6          | 631        |
| 07:30 AM    | 6                   | 502  | 0    | 0    | 508        | 0                             | 0    | 0    | 0    | 0          | 0                   | 130  | 2    | 0    | 132        | 5                         | 0    | 0    | 0    | 5          | 645        |
| 07:45 AM    | 5                   | 419  | 2    | 0    | 426        | 0                             | 0    | 0    | 0    | 0          | 0                   | 139  | 4    | 0    | 143        | 3                         | 0    | 3    | 0    | 6          | 575        |
| Total       | 16                  | 1858 | 2    | 0    | 1876       | 0                             | 0    | 1    | 0    | 1          | 0                   | 534  | 8    | 0    | 542        | 14                        | 0    | 10   | 0    | 24         | 2443       |
| 08:00 AM    | 7                   | 404  | 1    | 0    | 412        | 0                             | 0    | 0    | 0    | 0          | 0                   | 143  | 4    | 0    | 147        | 5                         | 0    | 3    | 0    | 8          | 567        |
| 08:15 AM    | 5                   | 406  | 0    | 0    | 411        | 0                             | 0    | 0    | 0    | 0          | 0                   | 141  | 5    | 0    | 146        | 7                         | 0    | 3    | 0    | 10         | 567        |
| 08:30 AM    | 5                   | 382  | 0    | 0    | 387        | 0                             | 0    | 0    | 0    | 0          | 0                   | 142  | 4    | 0    | 146        | 2                         | 0    | 1    | 0    | 3          | 536        |
| 08:45 AM    | 10                  | 300  | 1    | 0    | 311        | 0                             | 0    | 0    | 0    | 0          | 0                   | 158  | 11   | 0    | 169        | 3                         | 0    | 7    | 0    | 10         | 490        |
| Total       | 27                  | 1492 | 2    | 0    | 1521       | 0                             | 0    | 0    | 0    | 0          | 0                   | 584  | 24   | 0    | 608        | 17                        | 0    | 14   | 0    | 31         | 2160       |
| Grand Total | 43                  | 3350 | 4    | 0    | 3397       | 0                             | 0    | 1    | 0    | 1          | 0                   | 1118 | 32   | 0    | 1150       | 31                        | 0    | 24   | 0    | 55         | 4603       |
| Apprch %    | 1.3                 | 98.6 | 0.1  | 0    |            | 0                             | 0    | 100  | 0    |            | 0                   | 97.2 | 2.8  | 0    |            | 56.4                      | 0    | 43.6 | 0    |            |            |
| Total %     | 0.9                 | 72.8 | 0.1  | 0    | 73.8       | 0                             | 0    | 0    | 0    | 0          | 0                   | 24.3 | 0.7  | 0    | 25         | 0.7                       | 0    | 0.5  | 0    | 1.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | Private Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Dickerson Ln<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                         | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:00 AM                                                   | 1                   | 461  | 0    | 462        | 0                             | 0    | 0    | 0          | 0                   | 122  | 1    | 123        | 2                         | 0    | 5    | 7          | 592        |
| 07:15 AM                                                   | 4                   | 476  | 0    | 480        | 0                             | 0    | 1    | 1          | 0                   | 143  | 1    | 144        | 4                         | 0    | 2    | 6          | 631        |
| 07:30 AM                                                   | 6                   | 502  | 0    | 508        | 0                             | 0    | 0    | 0          | 0                   | 130  | 2    | 132        | 5                         | 0    | 0    | 5          | 645        |
| 07:45 AM                                                   | 5                   | 419  | 2    | 426        | 0                             | 0    | 0    | 0          | 0                   | 139  | 4    | 143        | 3                         | 0    | 3    | 6          | 575        |
| Total Volume                                               | 16                  | 1858 | 2    | 1876       | 0                             | 0    | 1    | 1          | 0                   | 534  | 8    | 542        | 14                        | 0    | 10   | 24         | 2443       |
| % App. Total                                               | 0.9                 | 99   | 0.1  |            | 0                             | 0    | 100  |            | 0                   | 98.5 | 1.5  |            | 58.3                      | 0    | 41.7 |            |            |
| PHF                                                        | .667                | .925 | .250 | .923       | .000                          | .000 | .250 | .250       | .000                | .934 | .500 | .941       | .700                      | .000 | .500 | .857       | .947       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 5\_US 29 & Dickerson Ln AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Private Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Dickerson Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                         | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 12   | 0    | 0    | 12         | 0                             | 0    | 0    | 0    | 0          | 0                   | 19   | 2    | 0    | 21         | 0                         | 0    | 0    | 0    | 0          | 33         |
| 07:15 AM    | 0                   | 15   | 0    | 0    | 15         | 0                             | 0    | 0    | 0    | 0          | 0                   | 20   | 0    | 0    | 20         | 0                         | 0    | 0    | 0    | 0          | 35         |
| 07:30 AM    | 0                   | 16   | 0    | 0    | 16         | 0                             | 0    | 0    | 0    | 0          | 0                   | 12   | 0    | 0    | 12         | 1                         | 0    | 0    | 0    | 1          | 29         |
| 07:45 AM    | 0                   | 24   | 0    | 0    | 24         | 0                             | 0    | 0    | 0    | 0          | 0                   | 16   | 1    | 0    | 17         | 0                         | 0    | 0    | 0    | 0          | 41         |
| Total       | 0                   | 67   | 0    | 0    | 67         | 0                             | 0    | 0    | 0    | 0          | 0                   | 67   | 3    | 0    | 70         | 1                         | 0    | 0    | 0    | 1          | 138        |
| 08:00 AM    | 0                   | 19   | 0    | 0    | 19         | 0                             | 0    | 0    | 0    | 0          | 0                   | 13   | 0    | 0    | 13         | 0                         | 0    | 0    | 0    | 0          | 32         |
| 08:15 AM    | 0                   | 16   | 0    | 0    | 16         | 0                             | 0    | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 0                         | 0    | 0    | 0    | 0          | 31         |
| 08:30 AM    | 1                   | 17   | 0    | 0    | 18         | 0                             | 0    | 0    | 0    | 0          | 0                   | 15   | 2    | 0    | 17         | 0                         | 0    | 0    | 0    | 0          | 35         |
| 08:45 AM    | 2                   | 16   | 0    | 0    | 18         | 0                             | 0    | 0    | 0    | 0          | 0                   | 17   | 0    | 0    | 17         | 1                         | 0    | 0    | 0    | 1          | 36         |
| Total       | 3                   | 68   | 0    | 0    | 71         | 0                             | 0    | 0    | 0    | 0          | 0                   | 60   | 2    | 0    | 62         | 1                         | 0    | 0    | 0    | 1          | 134        |
| Grand Total | 3                   | 135  | 0    | 0    | 138        | 0                             | 0    | 0    | 0    | 0          | 0                   | 127  | 5    | 0    | 132        | 2                         | 0    | 0    | 0    | 2          | 272        |
| Apprch %    | 2.2                 | 97.8 | 0    | 0    |            | 0                             | 0    | 0    | 0    |            | 0                   | 96.2 | 3.8  | 0    |            | 100                       | 0    | 0    | 0    |            |            |
| Total %     | 1.1                 | 49.6 | 0    | 0    | 50.7       | 0                             | 0    | 0    | 0    | 0          | 0                   | 46.7 | 1.8  | 0    | 48.5       | 0.7                       | 0    | 0    | 0    | 0.7        |            |

|                                                            | US 29<br>Southbound |      |      |            | Private Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Dickerson Ln<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                         | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM       |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:45 AM                                                   | 0                   | 24   | 0    | 24         | 0                             | 0    | 0    | 0          | 0                   | 16   | 1    | 17         | 0                         | 0    | 0    | 0          | 41         |
| 08:00 AM                                                   | 0                   | 19   | 0    | 19         | 0                             | 0    | 0    | 0          | 0                   | 13   | 0    | 13         | 0                         | 0    | 0    | 0          | 32         |
| 08:15 AM                                                   | 0                   | 16   | 0    | 16         | 0                             | 0    | 0    | 0          | 0                   | 15   | 0    | 15         | 0                         | 0    | 0    | 0          | 31         |
| 08:30 AM                                                   | 1                   | 17   | 0    | 18         | 0                             | 0    | 0    | 0          | 0                   | 15   | 2    | 17         | 0                         | 0    | 0    | 0          | 35         |
| Total Volume                                               | 1                   | 76   | 0    | 77         | 0                             | 0    | 0    | 0          | 0                   | 59   | 3    | 62         | 0                         | 0    | 0    | 0          | 139        |
| % App. Total                                               | 1.3                 | 98.7 | 0    |            | 0                             | 0    | 0    |            | 0                   | 95.2 | 4.8  |            | 0                         | 0    | 0    |            |            |
| PHF                                                        | .250                | .792 | .000 | .802       | .000                          | .000 | .000 | .000       | .000                | .922 | .375 | .912       | .000                      | .000 | .000 | .000       | .848       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 5\_US 29 & Dickerson Ln AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Private Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Dickerson Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                         | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                   | 473  | 0    | 0    | 474        | 0                             | 0    | 0    | 0    | 0          | 0                   | 141  | 3    | 0    | 144        | 2                         | 0    | 5    | 0    | 7          | 625        |
| 07:15 AM    | 4                   | 491  | 0    | 0    | 495        | 0                             | 0    | 1    | 0    | 1          | 0                   | 163  | 1    | 0    | 164        | 4                         | 0    | 2    | 0    | 6          | 666        |
| 07:30 AM    | 6                   | 518  | 0    | 0    | 524        | 0                             | 0    | 0    | 0    | 0          | 0                   | 142  | 2    | 0    | 144        | 6                         | 0    | 0    | 0    | 6          | 674        |
| 07:45 AM    | 5                   | 443  | 2    | 0    | 450        | 0                             | 0    | 0    | 0    | 0          | 0                   | 155  | 5    | 0    | 160        | 3                         | 0    | 3    | 0    | 6          | 616        |
| Total       | 16                  | 1925 | 2    | 0    | 1943       | 0                             | 0    | 1    | 0    | 1          | 0                   | 601  | 11   | 0    | 612        | 15                        | 0    | 10   | 0    | 25         | 2581       |
| 08:00 AM    | 7                   | 423  | 1    | 0    | 431        | 0                             | 0    | 0    | 0    | 0          | 0                   | 156  | 4    | 0    | 160        | 5                         | 0    | 3    | 0    | 8          | 599        |
| 08:15 AM    | 5                   | 422  | 0    | 0    | 427        | 0                             | 0    | 0    | 0    | 0          | 0                   | 156  | 5    | 0    | 161        | 7                         | 0    | 3    | 0    | 10         | 598        |
| 08:30 AM    | 6                   | 399  | 0    | 0    | 405        | 0                             | 0    | 0    | 0    | 0          | 0                   | 157  | 6    | 0    | 163        | 2                         | 0    | 1    | 0    | 3          | 571        |
| 08:45 AM    | 12                  | 316  | 1    | 0    | 329        | 0                             | 0    | 0    | 0    | 0          | 0                   | 175  | 11   | 0    | 186        | 4                         | 0    | 7    | 0    | 11         | 526        |
| Total       | 30                  | 1560 | 2    | 0    | 1592       | 0                             | 0    | 0    | 0    | 0          | 0                   | 644  | 26   | 0    | 670        | 18                        | 0    | 14   | 0    | 32         | 2294       |
| Grand Total | 46                  | 3485 | 4    | 0    | 3535       | 0                             | 0    | 1    | 0    | 1          | 0                   | 1245 | 37   | 0    | 1282       | 33                        | 0    | 24   | 0    | 57         | 4875       |
| Apprch %    | 1.3                 | 98.6 | 0.1  | 0    |            | 0                             | 0    | 100  | 0    |            | 0                   | 97.1 | 2.9  | 0    |            | 57.9                      | 0    | 42.1 | 0    |            |            |
| Total %     | 0.9                 | 71.5 | 0.1  | 0    | 72.5       | 0                             | 0    | 0    | 0    | 0          | 0                   | 25.5 | 0.8  | 0    | 26.3       | 0.7                       | 0    | 0.5  | 0    | 1.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | Private Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Dickerson Ln<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                         | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:00 AM                                                   | 1                   | 473  | 0    | 474        | 0                             | 0    | 0    | 0          | 0                   | 141  | 3    | 144        | 2                         | 0    | 5    | 7          | 625        |
| 07:15 AM                                                   | 4                   | 491  | 0    | 495        | 0                             | 0    | 1    | 1          | 0                   | 163  | 1    | 164        | 4                         | 0    | 2    | 6          | 666        |
| 07:30 AM                                                   | 6                   | 518  | 0    | 524        | 0                             | 0    | 0    | 0          | 0                   | 142  | 2    | 144        | 6                         | 0    | 0    | 6          | 674        |
| 07:45 AM                                                   | 5                   | 443  | 2    | 450        | 0                             | 0    | 0    | 0          | 0                   | 155  | 5    | 160        | 3                         | 0    | 3    | 6          | 616        |
| Total Volume                                               | 16                  | 1925 | 2    | 1943       | 0                             | 0    | 1    | 1          | 0                   | 601  | 11   | 612        | 15                        | 0    | 10   | 25         | 2581       |
| % App. Total                                               | 0.8                 | 99.1 | 0.1  |            | 0                             | 0    | 100  |            | 0                   | 98.2 | 1.8  |            | 60                        | 0    | 40   |            |            |
| PHF                                                        | .667                | .929 | .250 | .927       | .000                          | .000 | .250 | .250       | .000                | .922 | .550 | .933       | .625                      | .000 | .500 | .893       | .957       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 5\_US 29 & Dickerson Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Private Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Dickerson Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                         | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 207  | 0    | 0    | 207        | 0                             | 0    | 0    | 0    | 0          | 0                   | 393  | 3    | 0    | 396        | 5                         | 0    | 1    | 0    | 6          | 609        |
| 04:15 PM    | 2                   | 211  | 0    | 0    | 213        | 0                             | 0    | 0    | 0    | 0          | 0                   | 442  | 4    | 0    | 446        | 3                         | 0    | 3    | 0    | 6          | 665        |
| 04:30 PM    | 1                   | 251  | 0    | 0    | 252        | 0                             | 0    | 0    | 0    | 0          | 0                   | 419  | 4    | 0    | 423        | 4                         | 0    | 5    | 0    | 9          | 684        |
| 04:45 PM    | 4                   | 236  | 1    | 0    | 241        | 0                             | 0    | 0    | 0    | 0          | 0                   | 484  | 16   | 0    | 500        | 2                         | 0    | 4    | 0    | 6          | 747        |
| Total       | 7                   | 905  | 1    | 0    | 913        | 0                             | 0    | 0    | 0    | 0          | 0                   | 1738 | 27   | 0    | 1765       | 14                        | 0    | 13   | 0    | 27         | 2705       |
| 05:00 PM    | 4                   | 205  | 0    | 0    | 209        | 0                             | 0    | 0    | 0    | 0          | 1                   | 488  | 6    | 0    | 495        | 4                         | 0    | 7    | 0    | 11         | 715        |
| 05:15 PM    | 4                   | 210  | 0    | 0    | 214        | 0                             | 0    | 0    | 0    | 0          | 1                   | 509  | 6    | 0    | 516        | 1                         | 0    | 5    | 0    | 6          | 736        |
| 05:30 PM    | 4                   | 212  | 0    | 0    | 216        | 0                             | 0    | 0    | 0    | 0          | 0                   | 402  | 4    | 0    | 406        | 2                         | 0    | 4    | 0    | 6          | 628        |
| 05:45 PM    | 4                   | 208  | 0    | 0    | 212        | 0                             | 0    | 0    | 0    | 0          | 0                   | 442  | 8    | 0    | 450        | 3                         | 0    | 2    | 0    | 5          | 667        |
| Total       | 16                  | 835  | 0    | 0    | 851        | 0                             | 0    | 0    | 0    | 0          | 2                   | 1841 | 24   | 0    | 1867       | 10                        | 0    | 18   | 0    | 28         | 2746       |
| Grand Total | 23                  | 1740 | 1    | 0    | 1764       | 0                             | 0    | 0    | 0    | 0          | 2                   | 3579 | 51   | 0    | 3632       | 24                        | 0    | 31   | 0    | 55         | 5451       |
| Apprch %    | 1.3                 | 98.6 | 0.1  | 0    |            | 0                             | 0    | 0    | 0    |            | 0.1                 | 98.5 | 1.4  | 0    |            | 43.6                      | 0    | 56.4 | 0    |            |            |
| Total %     | 0.4                 | 31.9 | 0    | 0    | 32.4       | 0                             | 0    | 0    | 0    | 0          | 0                   | 65.7 | 0.9  | 0    | 66.6       | 0.4                       | 0    | 0.6  | 0    | 1          |            |

|                                                            | US 29<br>Southbound |            |          |            | Private Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |           |            | Dickerson Ln<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-------------------------------|------|------|------------|---------------------|------------|-----------|------------|---------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                         | Thru | Left | App. Total | Right               | Thru       | Left      | App. Total | Right                     | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                               |      |      |            |                     |            |           |            |                           |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                               |      |      |            |                     |            |           |            |                           |      |          |            |            |
| 04:30 PM                                                   | 1                   | <b>251</b> | 0        | <b>252</b> | 0                             | 0    | 0    | 0          | 0                   | 419        | 4         | 423        | <b>4</b>                  | 0    | 5        | 9          | 684        |
| 04:45 PM                                                   | <b>4</b>            | 236        | <b>1</b> | 241        | 0                             | 0    | 0    | 0          | 0                   | 484        | <b>16</b> | 500        | 2                         | 0    | 4        | 6          | <b>747</b> |
| 05:00 PM                                                   | 4                   | 205        | 0        | 209        | 0                             | 0    | 0    | 0          | <b>1</b>            | 488        | 6         | 495        | 4                         | 0    | <b>7</b> | <b>11</b>  | 715        |
| 05:15 PM                                                   | 4                   | 210        | 0        | 214        | 0                             | 0    | 0    | 0          | 1                   | <b>509</b> | 6         | <b>516</b> | 1                         | 0    | 5        | 6          | 736        |
| Total Volume                                               | 13                  | 902        | 1        | 916        | 0                             | 0    | 0    | 0          | 2                   | 1900       | 32        | 1934       | 11                        | 0    | 21       | 32         | 2882       |
| % App. Total                                               | 1.4                 | 98.5       | 0.1      |            | 0                             | 0    | 0    |            | 0.1                 | 98.2       | 1.7       |            | 34.4                      | 0    | 65.6     |            |            |
| PHF                                                        | .813                | .898       | .250     | .909       | .000                          | .000 | .000 | .000       | .500                | .933       | .500      | .937       | .688                      | .000 | .750     | .727       | .965       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 5\_US 29 & Dickerson Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Private Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Dickerson Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                         | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 13   | 0    | 0    | 13         | 0                             | 0    | 0    | 0    | 0          | 0                   | 10   | 0    | 0    | 10         | 0                         | 0    | 0    | 0    | 0          | 23         |
| 04:15 PM    | 0                   | 12   | 0    | 0    | 12         | 0                             | 0    | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 0                         | 0    | 0    | 0    | 0          | 23         |
| 04:30 PM    | 0                   | 9    | 0    | 0    | 9          | 0                             | 0    | 0    | 0    | 0          | 0                   | 15   | 1    | 0    | 16         | 0                         | 0    | 0    | 0    | 0          | 25         |
| 04:45 PM    | 1                   | 11   | 0    | 0    | 12         | 0                             | 0    | 0    | 0    | 0          | 0                   | 12   | 1    | 0    | 13         | 0                         | 0    | 0    | 0    | 0          | 25         |
| Total       | 1                   | 45   | 0    | 0    | 46         | 0                             | 0    | 0    | 0    | 0          | 0                   | 48   | 2    | 0    | 50         | 0                         | 0    | 0    | 0    | 0          | 96         |
| 05:00 PM    | 0                   | 6    | 0    | 0    | 6          | 0                             | 0    | 0    | 0    | 0          | 0                   | 6    | 0    | 0    | 6          | 0                         | 0    | 2    | 0    | 2          | 14         |
| 05:15 PM    | 0                   | 7    | 0    | 0    | 7          | 0                             | 0    | 0    | 0    | 0          | 0                   | 7    | 0    | 0    | 7          | 0                         | 0    | 0    | 0    | 0          | 14         |
| 05:30 PM    | 0                   | 5    | 0    | 0    | 5          | 0                             | 0    | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 0                         | 0    | 0    | 0    | 0          | 14         |
| 05:45 PM    | 0                   | 6    | 0    | 0    | 6          | 0                             | 0    | 0    | 0    | 0          | 0                   | 6    | 0    | 0    | 6          | 0                         | 0    | 0    | 0    | 0          | 12         |
| Total       | 0                   | 24   | 0    | 0    | 24         | 0                             | 0    | 0    | 0    | 0          | 0                   | 28   | 0    | 0    | 28         | 0                         | 0    | 2    | 0    | 2          | 54         |
| Grand Total | 1                   | 69   | 0    | 0    | 70         | 0                             | 0    | 0    | 0    | 0          | 0                   | 76   | 2    | 0    | 78         | 0                         | 0    | 2    | 0    | 2          | 150        |
| Apprch %    | 1.4                 | 98.6 | 0    | 0    |            | 0                             | 0    | 0    | 0    |            | 0                   | 97.4 | 2.6  | 0    |            | 0                         | 0    | 100  | 0    |            |            |
| Total %     | 0.7                 | 46   | 0    | 0    | 46.7       | 0                             | 0    | 0    | 0    | 0          | 0                   | 50.7 | 1.3  | 0    | 52         | 0                         | 0    | 1.3  | 0    | 1.3        |            |

|                                                            | US 29<br>Southbound |      |      |            | Private Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Dickerson Ln<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                         | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                               |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 04:00 PM                                                   | 0                   | 13   | 0    | 13         | 0                             | 0    | 0    | 0          | 0                   | 10   | 0    | 10         | 0                         | 0    | 0    | 0          | 23         |
| 04:15 PM                                                   | 0                   | 12   | 0    | 12         | 0                             | 0    | 0    | 0          | 0                   | 11   | 0    | 11         | 0                         | 0    | 0    | 0          | 23         |
| 04:30 PM                                                   | 0                   | 9    | 0    | 9          | 0                             | 0    | 0    | 0          | 0                   | 15   | 1    | 16         | 0                         | 0    | 0    | 0          | 25         |
| 04:45 PM                                                   | 1                   | 11   | 0    | 12         | 0                             | 0    | 0    | 0          | 0                   | 12   | 1    | 13         | 0                         | 0    | 0    | 0          | 25         |
| Total Volume                                               | 1                   | 45   | 0    | 46         | 0                             | 0    | 0    | 0          | 0                   | 48   | 2    | 50         | 0                         | 0    | 0    | 0          | 96         |
| % App. Total                                               | 2.2                 | 97.8 | 0    |            | 0                             | 0    | 0    |            | 0                   | 96   | 4    |            | 0                         | 0    | 0    |            |            |
| PHF                                                        | .250                | .865 | .000 | .885       | .000                          | .000 | .000 | .000       | .000                | .800 | .500 | .781       | .000                      | .000 | .000 | .000       | .960       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 5\_US 29 & Dickerson Ln PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Private Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Dickerson Ln<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                         | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 220  | 0    | 0    | 220        | 0                             | 0    | 0    | 0    | 0          | 0                   | 403  | 3    | 0    | 406        | 5                         | 0    | 1    | 0    | 6          | 632        |
| 04:15 PM    | 2                   | 223  | 0    | 0    | 225        | 0                             | 0    | 0    | 0    | 0          | 0                   | 453  | 4    | 0    | 457        | 3                         | 0    | 3    | 0    | 6          | 688        |
| 04:30 PM    | 1                   | 260  | 0    | 0    | 261        | 0                             | 0    | 0    | 0    | 0          | 0                   | 434  | 5    | 0    | 439        | 4                         | 0    | 5    | 0    | 9          | 709        |
| 04:45 PM    | 5                   | 247  | 1    | 0    | 253        | 0                             | 0    | 0    | 0    | 0          | 0                   | 496  | 17   | 0    | 513        | 2                         | 0    | 4    | 0    | 6          | 772        |
| Total       | 8                   | 950  | 1    | 0    | 959        | 0                             | 0    | 0    | 0    | 0          | 0                   | 1786 | 29   | 0    | 1815       | 14                        | 0    | 13   | 0    | 27         | 2801       |
| 05:00 PM    | 4                   | 211  | 0    | 0    | 215        | 0                             | 0    | 0    | 0    | 0          | 1                   | 494  | 6    | 0    | 501        | 4                         | 0    | 9    | 0    | 13         | 729        |
| 05:15 PM    | 4                   | 217  | 0    | 0    | 221        | 0                             | 0    | 0    | 0    | 0          | 1                   | 516  | 6    | 0    | 523        | 1                         | 0    | 5    | 0    | 6          | 750        |
| 05:30 PM    | 4                   | 217  | 0    | 0    | 221        | 0                             | 0    | 0    | 0    | 0          | 0                   | 411  | 4    | 0    | 415        | 2                         | 0    | 4    | 0    | 6          | 642        |
| 05:45 PM    | 4                   | 214  | 0    | 0    | 218        | 0                             | 0    | 0    | 0    | 0          | 0                   | 448  | 8    | 0    | 456        | 3                         | 0    | 2    | 0    | 5          | 679        |
| Total       | 16                  | 859  | 0    | 0    | 875        | 0                             | 0    | 0    | 0    | 0          | 2                   | 1869 | 24   | 0    | 1895       | 10                        | 0    | 20   | 0    | 30         | 2800       |
| Grand Total | 24                  | 1809 | 1    | 0    | 1834       | 0                             | 0    | 0    | 0    | 0          | 2                   | 3655 | 53   | 0    | 3710       | 24                        | 0    | 33   | 0    | 57         | 5601       |
| Apprch %    | 1.3                 | 98.6 | 0.1  | 0    |            | 0                             | 0    | 0    | 0    |            | 0.1                 | 98.5 | 1.4  | 0    |            | 42.1                      | 0    | 57.9 | 0    |            |            |
| Total %     | 0.4                 | 32.3 | 0    | 0    | 32.7       | 0                             | 0    | 0    | 0    | 0          | 0                   | 65.3 | 0.9  | 0    | 66.2       | 0.4                       | 0    | 0.6  | 0    | 1          |            |

|                                                            | US 29<br>Southbound |            |          |            | Private Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |           |            | Dickerson Ln<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-------------------------------|------|------|------------|---------------------|------------|-----------|------------|---------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                         | Thru | Left | App. Total | Right               | Thru       | Left      | App. Total | Right                     | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                               |      |      |            |                     |            |           |            |                           |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                               |      |      |            |                     |            |           |            |                           |      |          |            |            |
| 04:30 PM                                                   | 1                   | <b>260</b> | 0        | <b>261</b> | 0                             | 0    | 0    | 0          | 0                   | 434        | 5         | 439        | <b>4</b>                  | 0    | 5        | 9          | 709        |
| 04:45 PM                                                   | <b>5</b>            | 247        | <b>1</b> | 253        | 0                             | 0    | 0    | 0          | 0                   | 496        | <b>17</b> | 513        | 2                         | 0    | 4        | 6          | <b>772</b> |
| 05:00 PM                                                   | 4                   | 211        | 0        | 215        | 0                             | 0    | 0    | 0          | <b>1</b>            | 494        | 6         | 501        | 4                         | 0    | <b>9</b> | <b>13</b>  | 729        |
| 05:15 PM                                                   | 4                   | 217        | 0        | 221        | 0                             | 0    | 0    | 0          | 1                   | <b>516</b> | 6         | <b>523</b> | 1                         | 0    | 5        | 6          | 750        |
| Total Volume                                               | 14                  | 935        | 1        | 950        | 0                             | 0    | 0    | 0          | 2                   | 1940       | 34        | 1976       | 11                        | 0    | 23       | 34         | 2960       |
| % App. Total                                               | 1.5                 | 98.4       | 0.1      |            | 0                             | 0    | 0    |            | 0.1                 | 98.2       | 1.7       |            | 32.4                      | 0    | 67.6     |            |            |
| PHF                                                        | .700                | .899       | .250     | .910       | .000                          | .000 | .000 | .000       | .500                | .940       | .500      | .945       | .688                      | .000 | .639     | .654       | .959       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 6\_US 29 & Austin Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Austin Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 439  | 0    | 0    | 439        | 0                     | 0    | 0    | 0    | 0          | 0                   | 122  | 2    | 0    | 124        | 6                      | 0    | 0    | 0    | 6          | 569        |
| 07:15 AM    | 2                   | 486  | 0    | 0    | 488        | 0                     | 0    | 0    | 0    | 0          | 0                   | 141  | 2    | 0    | 143        | 12                     | 0    | 0    | 0    | 12         | 643        |
| 07:30 AM    | 2                   | 502  | 0    | 0    | 504        | 0                     | 0    | 0    | 0    | 0          | 0                   | 131  | 6    | 0    | 137        | 5                      | 0    | 0    | 0    | 5          | 646        |
| 07:45 AM    | 5                   | 429  | 0    | 0    | 434        | 0                     | 0    | 0    | 0    | 0          | 0                   | 145  | 5    | 0    | 150        | 4                      | 2    | 2    | 0    | 8          | 592        |
| Total       | 9                   | 1856 | 0    | 0    | 1865       | 0                     | 0    | 0    | 0    | 0          | 0                   | 539  | 15   | 0    | 554        | 27                     | 2    | 2    | 0    | 31         | 2450       |
| 08:00 AM    | 3                   | 390  | 0    | 0    | 393        | 0                     | 0    | 0    | 0    | 0          | 0                   | 147  | 5    | 0    | 152        | 13                     | 0    | 1    | 0    | 14         | 559        |
| 08:15 AM    | 3                   | 412  | 0    | 0    | 415        | 0                     | 0    | 0    | 0    | 0          | 0                   | 153  | 8    | 0    | 161        | 4                      | 0    | 0    | 0    | 4          | 580        |
| 08:30 AM    | 5                   | 371  | 0    | 0    | 376        | 0                     | 0    | 0    | 0    | 0          | 0                   | 144  | 5    | 0    | 149        | 7                      | 0    | 5    | 0    | 12         | 537        |
| 08:45 AM    | 1                   | 314  | 0    | 0    | 315        | 0                     | 0    | 0    | 0    | 0          | 0                   | 153  | 3    | 0    | 156        | 10                     | 0    | 1    | 0    | 11         | 482        |
| Total       | 12                  | 1487 | 0    | 0    | 1499       | 0                     | 0    | 0    | 0    | 0          | 0                   | 597  | 21   | 0    | 618        | 34                     | 0    | 7    | 0    | 41         | 2158       |
| Grand Total | 21                  | 3343 | 0    | 0    | 3364       | 0                     | 0    | 0    | 0    | 0          | 0                   | 1136 | 36   | 0    | 1172       | 61                     | 2    | 9    | 0    | 72         | 4608       |
| Apprch %    | 0.6                 | 99.4 | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 96.9 | 3.1  | 0    |            | 84.7                   | 2.8  | 12.5 | 0    |            |            |
| Total %     | 0.5                 | 72.5 | 0    | 0    | 73         | 0                     | 0    | 0    | 0    | 0          | 0                   | 24.7 | 0.8  | 0    | 25.4       | 1.3                    | 0    | 0.2  | 0    | 1.6        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Austin Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| 07:00 AM                                                   | 0                   | 439  | 0    | 439        | 0                     | 0    | 0    | 0          | 0                   | 122  | 2    | 124        | 6                      | 0    | 0    | 6          | 569        |
| 07:15 AM                                                   | 2                   | 486  | 0    | 488        | 0                     | 0    | 0    | 0          | 0                   | 141  | 2    | 143        | 12                     | 0    | 0    | 12         | 643        |
| 07:30 AM                                                   | 2                   | 502  | 0    | 504        | 0                     | 0    | 0    | 0          | 0                   | 131  | 6    | 137        | 5                      | 0    | 0    | 5          | 646        |
| 07:45 AM                                                   | 5                   | 429  | 0    | 434        | 0                     | 0    | 0    | 0          | 0                   | 145  | 5    | 150        | 4                      | 2    | 2    | 8          | 592        |
| Total Volume                                               | 9                   | 1856 | 0    | 1865       | 0                     | 0    | 0    | 0          | 0                   | 539  | 15   | 554        | 27                     | 2    | 2    | 31         | 2450       |
| % App. Total                                               | 0.5                 | 99.5 | 0    |            | 0                     | 0    | 0    |            | 0                   | 97.3 | 2.7  |            | 87.1                   | 6.5  | 6.5  |            |            |
| PHF                                                        | .450                | .924 | .000 | .925       | .000                  | .000 | .000 | .000       | .000                | .929 | .625 | .923       | .563                   | .250 | .250 | .646       | .948       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 6\_US 29 & Austin Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Austin Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 12   | 0    | 0    | 12         | 0                     | 0    | 0    | 0    | 0          | 0                   | 19   | 0    | 0    | 19         | 2                      | 0    | 0    | 0    | 2          | 33         |
| 07:15 AM    | 1                   | 14   | 0    | 0    | 15         | 0                     | 0    | 0    | 0    | 0          | 0                   | 21   | 2    | 0    | 23         | 1                      | 0    | 0    | 0    | 1          | 39         |
| 07:30 AM    | 0                   | 16   | 0    | 0    | 16         | 0                     | 0    | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 0                      | 0    | 0    | 0    | 0          | 27         |
| 07:45 AM    | 1                   | 22   | 0    | 0    | 23         | 0                     | 0    | 0    | 0    | 0          | 0                   | 17   | 0    | 0    | 17         | 0                      | 0    | 0    | 0    | 0          | 40         |
| Total       | 2                   | 64   | 0    | 0    | 66         | 0                     | 0    | 0    | 0    | 0          | 0                   | 68   | 2    | 0    | 70         | 3                      | 0    | 0    | 0    | 3          | 139        |
| 08:00 AM    | 0                   | 18   | 0    | 0    | 18         | 0                     | 0    | 0    | 0    | 0          | 0                   | 17   | 0    | 0    | 17         | 0                      | 0    | 1    | 0    | 1          | 36         |
| 08:15 AM    | 1                   | 13   | 0    | 0    | 14         | 0                     | 0    | 0    | 0    | 0          | 0                   | 19   | 1    | 0    | 20         | 0                      | 0    | 0    | 0    | 0          | 34         |
| 08:30 AM    | 0                   | 16   | 0    | 0    | 16         | 0                     | 0    | 0    | 0    | 0          | 0                   | 19   | 2    | 0    | 21         | 1                      | 0    | 2    | 0    | 3          | 40         |
| 08:45 AM    | 1                   | 20   | 0    | 0    | 21         | 0                     | 0    | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 0                      | 0    | 1    | 0    | 1          | 37         |
| Total       | 2                   | 67   | 0    | 0    | 69         | 0                     | 0    | 0    | 0    | 0          | 0                   | 70   | 3    | 0    | 73         | 1                      | 0    | 4    | 0    | 5          | 147        |
| Grand Total | 4                   | 131  | 0    | 0    | 135        | 0                     | 0    | 0    | 0    | 0          | 0                   | 138  | 5    | 0    | 143        | 4                      | 0    | 4    | 0    | 8          | 286        |
| Apprch %    | 3                   | 97   | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 96.5 | 3.5  | 0    |            | 50                     | 0    | 50   | 0    |            |            |
| Total %     | 1.4                 | 45.8 | 0    | 0    | 47.2       | 0                     | 0    | 0    | 0    | 0          | 0                   | 48.3 | 1.7  | 0    | 50         | 1.4                    | 0    | 1.4  | 0    | 2.8        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Austin Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| 07:45 AM                                                   | 1                   | 22   | 0    | 23         | 0                     | 0    | 0    | 0          | 0                   | 17   | 0    | 17         | 0                      | 0    | 0    | 0          | 40         |
| 08:00 AM                                                   | 0                   | 18   | 0    | 18         | 0                     | 0    | 0    | 0          | 0                   | 17   | 0    | 17         | 0                      | 0    | 1    | 1          | 36         |
| 08:15 AM                                                   | 1                   | 13   | 0    | 14         | 0                     | 0    | 0    | 0          | 0                   | 19   | 1    | 20         | 0                      | 0    | 0    | 0          | 34         |
| 08:30 AM                                                   | 0                   | 16   | 0    | 16         | 0                     | 0    | 0    | 0          | 0                   | 19   | 2    | 21         | 1                      | 0    | 2    | 3          | 40         |
| Total Volume                                               | 2                   | 69   | 0    | 71         | 0                     | 0    | 0    | 0          | 0                   | 72   | 3    | 75         | 1                      | 0    | 3    | 4          | 150        |
| % App. Total                                               | 2.8                 | 97.2 | 0    |            | 0                     | 0    | 0    |            | 0                   | 96   | 4    |            | 25                     | 0    | 75   |            |            |
| PHF                                                        | .500                | .784 | .000 | .772       | .000                  | .000 | .000 | .000       | .000                | .947 | .375 | .893       | .250                   | .000 | .375 | .333       | .938       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 6\_US 29 & Austin Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Austin Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 451  | 0    | 0    | 451        | 0                     | 0    | 0    | 0    | 0          | 0                   | 141  | 2    | 0    | 143        | 8                      | 0    | 0    | 0    | 8          | 602        |
| 07:15 AM    | 3                   | 500  | 0    | 0    | 503        | 0                     | 0    | 0    | 0    | 0          | 0                   | 162  | 4    | 0    | 166        | 13                     | 0    | 0    | 0    | 13         | 682        |
| 07:30 AM    | 2                   | 518  | 0    | 0    | 520        | 0                     | 0    | 0    | 0    | 0          | 0                   | 142  | 6    | 0    | 148        | 5                      | 0    | 0    | 0    | 5          | 673        |
| 07:45 AM    | 6                   | 451  | 0    | 0    | 457        | 0                     | 0    | 0    | 0    | 0          | 0                   | 162  | 5    | 0    | 167        | 4                      | 2    | 2    | 0    | 8          | 632        |
| Total       | 11                  | 1920 | 0    | 0    | 1931       | 0                     | 0    | 0    | 0    | 0          | 0                   | 607  | 17   | 0    | 624        | 30                     | 2    | 2    | 0    | 34         | 2589       |
| 08:00 AM    | 3                   | 408  | 0    | 0    | 411        | 0                     | 0    | 0    | 0    | 0          | 0                   | 164  | 5    | 0    | 169        | 13                     | 0    | 2    | 0    | 15         | 595        |
| 08:15 AM    | 4                   | 425  | 0    | 0    | 429        | 0                     | 0    | 0    | 0    | 0          | 0                   | 172  | 9    | 0    | 181        | 4                      | 0    | 0    | 0    | 4          | 614        |
| 08:30 AM    | 5                   | 387  | 0    | 0    | 392        | 0                     | 0    | 0    | 0    | 0          | 0                   | 163  | 7    | 0    | 170        | 8                      | 0    | 7    | 0    | 15         | 577        |
| 08:45 AM    | 2                   | 334  | 0    | 0    | 336        | 0                     | 0    | 0    | 0    | 0          | 0                   | 168  | 3    | 0    | 171        | 10                     | 0    | 2    | 0    | 12         | 519        |
| Total       | 14                  | 1554 | 0    | 0    | 1568       | 0                     | 0    | 0    | 0    | 0          | 0                   | 667  | 24   | 0    | 691        | 35                     | 0    | 11   | 0    | 46         | 2305       |
| Grand Total | 25                  | 3474 | 0    | 0    | 3499       | 0                     | 0    | 0    | 0    | 0          | 0                   | 1274 | 41   | 0    | 1315       | 65                     | 2    | 13   | 0    | 80         | 4894       |
| Apprch %    | 0.7                 | 99.3 | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 96.9 | 3.1  | 0    |            | 81.2                   | 2.5  | 16.2 | 0    |            |            |
| Total %     | 0.5                 | 71   | 0    | 0    | 71.5       | 0                     | 0    | 0    | 0    | 0          | 0                   | 26   | 0.8  | 0    | 26.9       | 1.3                    | 0    | 0.3  | 0    | 1.6        |            |

|                                                            | US 29<br>Southbound |            |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |          |            | Austin Dr<br>Eastbound |          |          |            |            |
|------------------------------------------------------------|---------------------|------------|------|------------|-----------------------|------|------|------------|---------------------|------------|----------|------------|------------------------|----------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru       | Left     | App. Total | Right                  | Thru     | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |            |      |            |                       |      |      |            |                     |            |          |            |                        |          |          |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |            |      |            |                       |      |      |            |                     |            |          |            |                        |          |          |            |            |
| 07:00 AM                                                   | 0                   | 451        | 0    | 451        | 0                     | 0    | 0    | 0          | 0                   | 141        | 2        | 143        | 8                      | 0        | 0        | 8          | 602        |
| 07:15 AM                                                   | 3                   | 500        | 0    | 503        | 0                     | 0    | 0    | 0          | 0                   | <b>162</b> | 4        | 166        | <b>13</b>              | 0        | 0        | <b>13</b>  | <b>682</b> |
| 07:30 AM                                                   | 2                   | <b>518</b> | 0    | <b>520</b> | 0                     | 0    | 0    | 0          | 0                   | 142        | <b>6</b> | 148        | 5                      | 0        | 0        | 5          | 673        |
| 07:45 AM                                                   | <b>6</b>            | 451        | 0    | 457        | 0                     | 0    | 0    | 0          | 0                   | 162        | 5        | <b>167</b> | 4                      | <b>2</b> | <b>2</b> | 8          | 632        |
| Total Volume                                               | 11                  | 1920       | 0    | 1931       | 0                     | 0    | 0    | 0          | 0                   | 607        | 17       | 624        | 30                     | 2        | 2        | 34         | 2589       |
| % App. Total                                               | 0.6                 | 99.4       | 0    |            | 0                     | 0    | 0    |            | 0                   | 97.3       | 2.7      |            | 88.2                   | 5.9      | 5.9      |            |            |
| PHF                                                        | .458                | .927       | .000 | .928       | .000                  | .000 | .000 | .000       | .000                | .937       | .708     | .934       | .577                   | .250     | .250     | .654       | .949       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 6\_US 29 & Austin Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Austin Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 2                   | 200  | 0    | 0    | 202        | 0                     | 0    | 0    | 0    | 0          | 0                   | 405  | 3    | 0    | 408        | 4                      | 0    | 4    | 0    | 8          | 618        |
| 04:15 PM    | 1                   | 223  | 0    | 0    | 224        | 0                     | 0    | 0    | 0    | 0          | 0                   | 438  | 6    | 0    | 444        | 5                      | 0    | 3    | 0    | 8          | 676        |
| 04:30 PM    | 5                   | 257  | 0    | 0    | 262        | 0                     | 0    | 0    | 0    | 0          | 0                   | 438  | 7    | 0    | 445        | 10                     | 0    | 0    | 0    | 10         | 717        |
| 04:45 PM    | 5                   | 239  | 0    | 0    | 244        | 0                     | 0    | 0    | 0    | 0          | 0                   | 491  | 5    | 0    | 496        | 9                      | 0    | 3    | 0    | 12         | 752        |
| Total       | 13                  | 919  | 0    | 0    | 932        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1772 | 21   | 0    | 1793       | 28                     | 0    | 10   | 0    | 38         | 2763       |
| 05:00 PM    | 2                   | 193  | 0    | 0    | 195        | 0                     | 0    | 0    | 0    | 0          | 0                   | 493  | 6    | 0    | 499        | 9                      | 0    | 3    | 0    | 12         | 706        |
| 05:15 PM    | 7                   | 213  | 0    | 0    | 220        | 0                     | 0    | 0    | 0    | 0          | 0                   | 490  | 6    | 0    | 496        | 5                      | 0    | 4    | 0    | 9          | 725        |
| 05:30 PM    | 5                   | 194  | 0    | 0    | 199        | 0                     | 0    | 0    | 0    | 0          | 0                   | 418  | 12   | 0    | 430        | 5                      | 0    | 0    | 0    | 5          | 634        |
| 05:45 PM    | 4                   | 210  | 0    | 0    | 214        | 0                     | 0    | 0    | 0    | 0          | 0                   | 420  | 2    | 0    | 422        | 7                      | 0    | 0    | 0    | 7          | 643        |
| Total       | 18                  | 810  | 0    | 0    | 828        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1821 | 26   | 0    | 1847       | 26                     | 0    | 7    | 0    | 33         | 2708       |
| Grand Total | 31                  | 1729 | 0    | 0    | 1760       | 0                     | 0    | 0    | 0    | 0          | 0                   | 3593 | 47   | 0    | 3640       | 54                     | 0    | 17   | 0    | 71         | 5471       |
| Apprch %    | 1.8                 | 98.2 | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 98.7 | 1.3  | 0    |            | 76.1                   | 0    | 23.9 | 0    |            |            |
| Total %     | 0.6                 | 31.6 | 0    | 0    | 32.2       | 0                     | 0    | 0    | 0    | 0          | 0                   | 65.7 | 0.9  | 0    | 66.5       | 1                      | 0    | 0.3  | 0    | 1.3        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Austin Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| 04:30 PM                                                   | 5                   | 257  | 0    | 262        | 0                     | 0    | 0    | 0          | 0                   | 438  | 7    | 445        | 10                     | 0    | 0    | 10         | 717        |
| 04:45 PM                                                   | 5                   | 239  | 0    | 244        | 0                     | 0    | 0    | 0          | 0                   | 491  | 5    | 496        | 9                      | 0    | 3    | 12         | 752        |
| 05:00 PM                                                   | 2                   | 193  | 0    | 195        | 0                     | 0    | 0    | 0          | 0                   | 493  | 6    | 499        | 9                      | 0    | 3    | 12         | 706        |
| 05:15 PM                                                   | 7                   | 213  | 0    | 220        | 0                     | 0    | 0    | 0          | 0                   | 490  | 6    | 496        | 5                      | 0    | 4    | 9          | 725        |
| Total Volume                                               | 19                  | 902  | 0    | 921        | 0                     | 0    | 0    | 0          | 0                   | 1912 | 24   | 1936       | 33                     | 0    | 10   | 43         | 2900       |
| % App. Total                                               | 2.1                 | 97.9 | 0    |            | 0                     | 0    | 0    |            | 0                   | 98.8 | 1.2  |            | 76.7                   | 0    | 23.3 |            |            |
| PHF                                                        | .679                | .877 | .000 | .879       | .000                  | .000 | .000 | .000       | .000                | .970 | .857 | .970       | .825                   | .000 | .625 | .896       | .964       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 6\_US 29 & Austin Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Austin Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 13   | 0    | 0    | 13         | 0                     | 0    | 0    | 0    | 0          | 0                   | 10   | 0    | 0    | 10         | 0                      | 0    | 0    | 0    | 0          | 0          |
| 04:15 PM    | 0                   | 12   | 0    | 0    | 12         | 0                     | 0    | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 0                      | 0    | 0    | 0    | 0          | 0          |
| 04:30 PM    | 0                   | 8    | 0    | 0    | 8          | 0                     | 0    | 0    | 0    | 0          | 0                   | 15   | 1    | 0    | 16         | 0                      | 0    | 0    | 0    | 0          | 0          |
| 04:45 PM    | 1                   | 11   | 0    | 0    | 12         | 0                     | 0    | 0    | 0    | 0          | 0                   | 11   | 1    | 0    | 12         | 1                      | 0    | 0    | 0    | 1          | 25         |
| Total       | 1                   | 44   | 0    | 0    | 45         | 0                     | 0    | 0    | 0    | 0          | 0                   | 47   | 2    | 0    | 49         | 1                      | 0    | 0    | 0    | 1          | 95         |
| 05:00 PM    | 1                   | 6    | 0    | 0    | 7          | 0                     | 0    | 0    | 0    | 0          | 0                   | 7    | 0    | 0    | 7          | 0                      | 0    | 0    | 0    | 0          | 14         |
| 05:15 PM    | 0                   | 7    | 0    | 0    | 7          | 0                     | 0    | 0    | 0    | 0          | 0                   | 7    | 0    | 0    | 7          | 0                      | 0    | 0    | 0    | 0          | 14         |
| 05:30 PM    | 0                   | 5    | 0    | 0    | 5          | 0                     | 0    | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 0                      | 0    | 0    | 0    | 0          | 14         |
| 05:45 PM    | 0                   | 5    | 0    | 0    | 5          | 0                     | 0    | 0    | 0    | 0          | 0                   | 5    | 0    | 0    | 5          | 0                      | 0    | 0    | 0    | 0          | 10         |
| Total       | 1                   | 23   | 0    | 0    | 24         | 0                     | 0    | 0    | 0    | 0          | 0                   | 28   | 0    | 0    | 28         | 0                      | 0    | 0    | 0    | 0          | 52         |
| Grand Total | 2                   | 67   | 0    | 0    | 69         | 0                     | 0    | 0    | 0    | 0          | 0                   | 75   | 2    | 0    | 77         | 1                      | 0    | 0    | 0    | 1          | 147        |
| Apprch %    | 2.9                 | 97.1 | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 97.4 | 2.6  | 0    |            | 100                    | 0    | 0    | 0    |            |            |
| Total %     | 1.4                 | 45.6 | 0    | 0    | 46.9       | 0                     | 0    | 0    | 0    | 0          | 0                   | 51   | 1.4  | 0    | 52.4       | 0.7                    | 0    | 0    | 0    | 0.7        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Austin Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                  | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                        |      |      |            |            |
| 04:00 PM                                                   | 0                   | 13   | 0    | 13         | 0                     | 0    | 0    | 0          | 0                   | 10   | 0    | 10         | 0                      | 0    | 0    | 0          | 23         |
| 04:15 PM                                                   | 0                   | 12   | 0    | 12         | 0                     | 0    | 0    | 0          | 0                   | 11   | 0    | 11         | 0                      | 0    | 0    | 0          | 23         |
| 04:30 PM                                                   | 0                   | 8    | 0    | 8          | 0                     | 0    | 0    | 0          | 0                   | 15   | 1    | 16         | 0                      | 0    | 0    | 0          | 24         |
| 04:45 PM                                                   | 1                   | 11   | 0    | 12         | 0                     | 0    | 0    | 0          | 0                   | 11   | 1    | 12         | 1                      | 0    | 0    | 1          | 25         |
| Total Volume                                               | 1                   | 44   | 0    | 45         | 0                     | 0    | 0    | 0          | 0                   | 47   | 2    | 49         | 1                      | 0    | 0    | 1          | 95         |
| % App. Total                                               | 2.2                 | 97.8 | 0    |            | 0                     | 0    | 0    |            | 0                   | 95.9 | 4.1  |            | 100                    | 0    | 0    |            |            |
| PHF                                                        | .250                | .846 | .000 | .865       | .000                  | .000 | .000 | .000       | .000                | .783 | .500 | .766       | .250                   | .000 | .000 | .250       | .950       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 6\_US 29 & Austin Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Austin Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                  | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 2                   | 213  | 0    | 0    | 215        | 0                     | 0    | 0    | 0    | 0          | 0                   | 415  | 3    | 0    | 418        | 4                      | 0    | 4    | 0    | 8          | 641        |
| 04:15 PM    | 1                   | 235  | 0    | 0    | 236        | 0                     | 0    | 0    | 0    | 0          | 0                   | 449  | 6    | 0    | 455        | 5                      | 0    | 3    | 0    | 8          | 699        |
| 04:30 PM    | 5                   | 265  | 0    | 0    | 270        | 0                     | 0    | 0    | 0    | 0          | 0                   | 453  | 8    | 0    | 461        | 10                     | 0    | 0    | 0    | 10         | 741        |
| 04:45 PM    | 6                   | 250  | 0    | 0    | 256        | 0                     | 0    | 0    | 0    | 0          | 0                   | 502  | 6    | 0    | 508        | 10                     | 0    | 3    | 0    | 13         | 777        |
| Total       | 14                  | 963  | 0    | 0    | 977        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1819 | 23   | 0    | 1842       | 29                     | 0    | 10   | 0    | 39         | 2858       |
| 05:00 PM    | 3                   | 199  | 0    | 0    | 202        | 0                     | 0    | 0    | 0    | 0          | 0                   | 500  | 6    | 0    | 506        | 9                      | 0    | 3    | 0    | 12         | 720        |
| 05:15 PM    | 7                   | 220  | 0    | 0    | 227        | 0                     | 0    | 0    | 0    | 0          | 0                   | 497  | 6    | 0    | 503        | 5                      | 0    | 4    | 0    | 9          | 739        |
| 05:30 PM    | 5                   | 199  | 0    | 0    | 204        | 0                     | 0    | 0    | 0    | 0          | 0                   | 427  | 12   | 0    | 439        | 5                      | 0    | 0    | 0    | 5          | 648        |
| 05:45 PM    | 4                   | 215  | 0    | 0    | 219        | 0                     | 0    | 0    | 0    | 0          | 0                   | 425  | 2    | 0    | 427        | 7                      | 0    | 0    | 0    | 7          | 653        |
| Total       | 19                  | 833  | 0    | 0    | 852        | 0                     | 0    | 0    | 0    | 0          | 0                   | 1849 | 26   | 0    | 1875       | 26                     | 0    | 7    | 0    | 33         | 2760       |
| Grand Total | 33                  | 1796 | 0    | 0    | 1829       | 0                     | 0    | 0    | 0    | 0          | 0                   | 3668 | 49   | 0    | 3717       | 55                     | 0    | 17   | 0    | 72         | 5618       |
| Apprch %    | 1.8                 | 98.2 | 0    | 0    |            | 0                     | 0    | 0    | 0    |            | 0                   | 98.7 | 1.3  | 0    |            | 76.4                   | 0    | 23.6 | 0    |            |            |
| Total %     | 0.6                 | 32   | 0    | 0    | 32.6       | 0                     | 0    | 0    | 0    | 0          | 0                   | 65.3 | 0.9  | 0    | 66.2       | 1                      | 0    | 0.3  | 0    | 1.3        |            |

|                                                            | US 29<br>Southbound |            |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |            |          |            | Austin Dr<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|------|------------|-----------------------|------|------|------------|---------------------|------------|----------|------------|------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru       | Left     | App. Total | Right                  | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |      |            |                       |      |      |            |                     |            |          |            |                        |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |      |            |                       |      |      |            |                     |            |          |            |                        |      |          |            |            |
| 04:30 PM                                                   | 5                   | <b>265</b> | 0    | <b>270</b> | 0                     | 0    | 0    | 0          | 0                   | 453        | <b>8</b> | 461        | <b>10</b>              | 0    | 0        | 10         | 741        |
| 04:45 PM                                                   | 6                   | 250        | 0    | 256        | 0                     | 0    | 0    | 0          | 0                   | <b>502</b> | 6        | <b>508</b> | 10                     | 0    | 3        | <b>13</b>  | <b>777</b> |
| 05:00 PM                                                   | 3                   | 199        | 0    | 202        | 0                     | 0    | 0    | 0          | 0                   | 500        | 6        | 506        | 9                      | 0    | 3        | 12         | 720        |
| 05:15 PM                                                   | <b>7</b>            | 220        | 0    | 227        | 0                     | 0    | 0    | 0          | 0                   | 497        | 6        | 503        | 5                      | 0    | <b>4</b> | 9          | 739        |
| Total Volume                                               | 21                  | 934        | 0    | 955        | 0                     | 0    | 0    | 0          | 0                   | 1952       | 26       | 1978       | 34                     | 0    | 10       | 44         | 2977       |
| % App. Total                                               | 2.2                 | 97.8       | 0    |            | 0                     | 0    | 0    |            | 0                   | 98.7       | 1.3      |            | 77.3                   | 0    | 22.7     |            |            |
| PHF                                                        | .750                | .881       | .000 | .884       | .000                  | .000 | .000 | .000       | .000                | .972       | .813     | .973       | .850                   | .000 | .625     | .846       | .958       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 7\_US 29 & Boulders Rd\_Briarwood Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Boulders Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Briarwood Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|--------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                    | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 16                  | 412  | 27   | 0    | 455        | 4                        | 0    | 4    | 0    | 8          | 38                  | 116  | 4    | 0    | 158        | 18                        | 5    | 5    | 0    | 28         | 649        |
| 07:15 AM    | 18                  | 455  | 27   | 0    | 500        | 3                        | 0    | 4    | 0    | 7          | 29                  | 133  | 6    | 0    | 168        | 31                        | 3    | 2    | 0    | 36         | 711        |
| 07:30 AM    | 9                   | 483  | 21   | 0    | 513        | 2                        | 0    | 3    | 0    | 5          | 44                  | 126  | 12   | 0    | 182        | 32                        | 6    | 9    | 0    | 47         | 747        |
| 07:45 AM    | 10                  | 392  | 28   | 0    | 430        | 3                        | 1    | 5    | 0    | 9          | 60                  | 145  | 17   | 0    | 222        | 23                        | 5    | 4    | 0    | 32         | 693        |
| Total       | 53                  | 1742 | 103  | 0    | 1898       | 12                       | 1    | 16   | 0    | 29         | 171                 | 520  | 39   | 0    | 730        | 104                       | 19   | 20   | 0    | 143        | 2800       |
| 08:00 AM    | 8                   | 333  | 31   | 0    | 372        | 0                        | 0    | 3    | 0    | 3          | 68                  | 155  | 12   | 0    | 235        | 24                        | 5    | 3    | 0    | 32         | 642        |
| 08:15 AM    | 12                  | 387  | 35   | 0    | 434        | 3                        | 0    | 4    | 0    | 7          | 59                  | 169  | 15   | 0    | 243        | 25                        | 3    | 1    | 0    | 29         | 713        |
| 08:30 AM    | 9                   | 337  | 24   | 0    | 370        | 3                        | 0    | 7    | 0    | 10         | 55                  | 139  | 13   | 0    | 207        | 16                        | 4    | 5    | 0    | 25         | 612        |
| 08:45 AM    | 12                  | 294  | 22   | 0    | 328        | 3                        | 0    | 8    | 0    | 11         | 53                  | 151  | 6    | 0    | 210        | 24                        | 5    | 7    | 0    | 36         | 585        |
| Total       | 41                  | 1351 | 112  | 0    | 1504       | 9                        | 0    | 22   | 0    | 31         | 235                 | 614  | 46   | 0    | 895        | 89                        | 17   | 16   | 0    | 122        | 2552       |
| Grand Total | 94                  | 3093 | 215  | 0    | 3402       | 21                       | 1    | 38   | 0    | 60         | 406                 | 1134 | 85   | 0    | 1625       | 193                       | 36   | 36   | 0    | 265        | 5352       |
| Apprch %    | 2.8                 | 90.9 | 6.3  | 0    |            | 35                       | 1.7  | 63.3 | 0    |            | 25                  | 69.8 | 5.2  | 0    |            | 72.8                      | 13.6 | 13.6 | 0    |            |            |
| Total %     | 1.8                 | 57.8 | 4    | 0    | 63.6       | 0.4                      | 0    | 0.7  | 0    | 1.1        | 7.6                 | 21.2 | 1.6  | 0    | 30.4       | 3.6                       | 0.7  | 0.7  | 0    | 5          |            |

|                                                            | US 29<br>Southbound |      |      |            | Boulders Rd<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Briarwood Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|--------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                    | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                          |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                          |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:00 AM                                                   | 16                  | 412  | 27   | 455        | 4                        | 0    | 4    | 8          | 38                  | 116  | 4    | 158        | 18                        | 5    | 5    | 28         | 649        |
| 07:15 AM                                                   | 18                  | 455  | 27   | 500        | 3                        | 0    | 4    | 7          | 29                  | 133  | 6    | 168        | 31                        | 3    | 2    | 36         | 711        |
| 07:30 AM                                                   | 9                   | 483  | 21   | 513        | 2                        | 0    | 3    | 5          | 44                  | 126  | 12   | 182        | 32                        | 6    | 9    | 47         | 747        |
| 07:45 AM                                                   | 10                  | 392  | 28   | 430        | 3                        | 1    | 5    | 9          | 60                  | 145  | 17   | 222        | 23                        | 5    | 4    | 32         | 693        |
| Total Volume                                               | 53                  | 1742 | 103  | 1898       | 12                       | 1    | 16   | 29         | 171                 | 520  | 39   | 730        | 104                       | 19   | 20   | 143        | 2800       |
| % App. Total                                               | 2.8                 | 91.8 | 5.4  |            | 41.4                     | 3.4  | 55.2 |            | 23.4                | 71.2 | 5.3  |            | 72.7                      | 13.3 | 14   |            |            |
| PHF                                                        | .736                | .902 | .920 | .925       | .750                     | .250 | .800 | .806       | .713                | .897 | .574 | .822       | .813                      | .792 | .556 | .761       | .937       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 7\_US 29 & Boulders Rd\_Briarwood Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Boulders Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Briarwood Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|--------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                    | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 13   | 0    | 0    | 13         | 0                        | 0    | 0    | 0    | 0          | 0                   | 20   | 1    | 0    | 21         | 1                         | 0    | 1    | 0    | 2          | 36         |
| 07:15 AM    | 0                   | 14   | 0    | 0    | 14         | 0                        | 0    | 0    | 0    | 0          | 0                   | 22   | 0    | 0    | 22         | 3                         | 0    | 0    | 0    | 3          | 39         |
| 07:30 AM    | 0                   | 17   | 0    | 0    | 17         | 0                        | 0    | 0    | 0    | 0          | 0                   | 12   | 0    | 0    | 12         | 0                         | 0    | 0    | 0    | 0          | 29         |
| 07:45 AM    | 0                   | 23   | 0    | 0    | 23         | 0                        | 0    | 0    | 0    | 0          | 0                   | 19   | 0    | 0    | 19         | 0                         | 0    | 0    | 0    | 0          | 42         |
| Total       | 0                   | 67   | 0    | 0    | 67         | 0                        | 0    | 0    | 0    | 0          | 0                   | 73   | 1    | 0    | 74         | 4                         | 0    | 1    | 0    | 5          | 146        |
| 08:00 AM    | 0                   | 16   | 0    | 0    | 16         | 0                        | 0    | 0    | 0    | 0          | 0                   | 15   | 1    | 0    | 16         | 0                         | 0    | 1    | 0    | 1          | 33         |
| 08:15 AM    | 1                   | 13   | 0    | 0    | 14         | 0                        | 0    | 0    | 0    | 0          | 0                   | 20   | 0    | 0    | 20         | 0                         | 0    | 0    | 0    | 0          | 34         |
| 08:30 AM    | 1                   | 10   | 1    | 0    | 12         | 0                        | 0    | 0    | 0    | 0          | 0                   | 25   | 2    | 0    | 27         | 1                         | 0    | 0    | 0    | 1          | 40         |
| 08:45 AM    | 0                   | 20   | 1    | 0    | 21         | 0                        | 0    | 0    | 0    | 0          | 0                   | 10   | 0    | 0    | 10         | 0                         | 0    | 1    | 0    | 1          | 32         |
| Total       | 2                   | 59   | 2    | 0    | 63         | 0                        | 0    | 0    | 0    | 0          | 0                   | 70   | 3    | 0    | 73         | 1                         | 0    | 2    | 0    | 3          | 139        |
| Grand Total | 2                   | 126  | 2    | 0    | 130        | 0                        | 0    | 0    | 0    | 0          | 0                   | 143  | 4    | 0    | 147        | 5                         | 0    | 3    | 0    | 8          | 285        |
| Apprch %    | 1.5                 | 96.9 | 1.5  | 0    |            | 0                        | 0    | 0    | 0    |            | 0                   | 97.3 | 2.7  | 0    |            | 62.5                      | 0    | 37.5 | 0    |            |            |
| Total %     | 0.7                 | 44.2 | 0.7  | 0    | 45.6       | 0                        | 0    | 0    | 0    | 0          | 0                   | 50.2 | 1.4  | 0    | 51.6       | 1.8                       | 0    | 1.1  | 0    | 2.8        |            |

|                                                            | US 29<br>Southbound |      |      |            | Boulders Rd<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Briarwood Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|--------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                    | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                          |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM       |                     |      |      |            |                          |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:45 AM                                                   | 0                   | 23   | 0    | 23         | 0                        | 0    | 0    | 0          | 0                   | 19   | 0    | 19         | 0                         | 0    | 0    | 0          | 42         |
| 08:00 AM                                                   | 0                   | 16   | 0    | 16         | 0                        | 0    | 0    | 0          | 0                   | 15   | 1    | 16         | 0                         | 0    | 1    | 1          | 33         |
| 08:15 AM                                                   | 1                   | 13   | 0    | 14         | 0                        | 0    | 0    | 0          | 0                   | 20   | 0    | 20         | 0                         | 0    | 0    | 0          | 34         |
| 08:30 AM                                                   | 1                   | 10   | 1    | 12         | 0                        | 0    | 0    | 0          | 0                   | 25   | 2    | 27         | 1                         | 0    | 0    | 1          | 40         |
| Total Volume                                               | 2                   | 62   | 1    | 65         | 0                        | 0    | 0    | 0          | 0                   | 79   | 3    | 82         | 1                         | 0    | 1    | 2          | 149        |
| % App. Total                                               | 3.1                 | 95.4 | 1.5  |            | 0                        | 0    | 0    |            | 0                   | 96.3 | 3.7  |            | 50                        | 0    | 50   |            |            |
| PHF                                                        | .500                | .674 | .250 | .707       | .000                     | .000 | .000 | .000       | .000                | .790 | .375 | .759       | .250                      | .000 | .250 | .500       | .887       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 7\_US 29 & Boulders Rd\_Briarwood Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Boulders Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Briarwood Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|--------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                    | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 16                  | 425  | 27   | 0    | 468        | 4                        | 0    | 4    | 0    | 8          | 38                  | 136  | 5    | 0    | 179        | 19                        | 5    | 6    | 0    | 30         | 685        |
| 07:15 AM    | 18                  | 469  | 27   | 0    | 514        | 3                        | 0    | 4    | 0    | 7          | 29                  | 155  | 6    | 0    | 190        | 34                        | 3    | 2    | 0    | 39         | 750        |
| 07:30 AM    | 9                   | 500  | 21   | 0    | 530        | 2                        | 0    | 3    | 0    | 5          | 44                  | 138  | 12   | 0    | 194        | 32                        | 6    | 9    | 0    | 47         | 776        |
| 07:45 AM    | 10                  | 415  | 28   | 0    | 453        | 3                        | 1    | 5    | 0    | 9          | 60                  | 164  | 17   | 0    | 241        | 23                        | 5    | 4    | 0    | 32         | 735        |
| Total       | 53                  | 1809 | 103  | 0    | 1965       | 12                       | 1    | 16   | 0    | 29         | 171                 | 593  | 40   | 0    | 804        | 108                       | 19   | 21   | 0    | 148        | 2946       |
| 08:00 AM    | 8                   | 349  | 31   | 0    | 388        | 0                        | 0    | 3    | 0    | 3          | 68                  | 170  | 13   | 0    | 251        | 24                        | 5    | 4    | 0    | 33         | 675        |
| 08:15 AM    | 13                  | 400  | 35   | 0    | 448        | 3                        | 0    | 4    | 0    | 7          | 59                  | 189  | 15   | 0    | 263        | 25                        | 3    | 1    | 0    | 29         | 747        |
| 08:30 AM    | 10                  | 347  | 25   | 0    | 382        | 3                        | 0    | 7    | 0    | 10         | 55                  | 164  | 15   | 0    | 234        | 17                        | 4    | 5    | 0    | 26         | 652        |
| 08:45 AM    | 12                  | 314  | 23   | 0    | 349        | 3                        | 0    | 8    | 0    | 11         | 53                  | 161  | 6    | 0    | 220        | 24                        | 5    | 8    | 0    | 37         | 617        |
| Total       | 43                  | 1410 | 114  | 0    | 1567       | 9                        | 0    | 22   | 0    | 31         | 235                 | 684  | 49   | 0    | 968        | 90                        | 17   | 18   | 0    | 125        | 2691       |
| Grand Total | 96                  | 3219 | 217  | 0    | 3532       | 21                       | 1    | 38   | 0    | 60         | 406                 | 1277 | 89   | 0    | 1772       | 198                       | 36   | 39   | 0    | 273        | 5637       |
| Apprch %    | 2.7                 | 91.1 | 6.1  | 0    |            | 35                       | 1.7  | 63.3 | 0    |            | 22.9                | 72.1 | 5    | 0    |            | 72.5                      | 13.2 | 14.3 | 0    |            |            |
| Total %     | 1.7                 | 57.1 | 3.8  | 0    | 62.7       | 0.4                      | 0    | 0.7  | 0    | 1.1        | 7.2                 | 22.7 | 1.6  | 0    | 31.4       | 3.5                       | 0.6  | 0.7  | 0    | 4.8        |            |

|                                                            | US 29<br>Southbound |      |      |            | Boulders Rd<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Briarwood Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|--------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                    | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                          |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                          |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:00 AM                                                   | 16                  | 425  | 27   | 468        | 4                        | 0    | 4    | 8          | 38                  | 136  | 5    | 179        | 19                        | 5    | 6    | 30         | 685        |
| 07:15 AM                                                   | 18                  | 469  | 27   | 514        | 3                        | 0    | 4    | 7          | 29                  | 155  | 6    | 190        | 34                        | 3    | 2    | 39         | 750        |
| 07:30 AM                                                   | 9                   | 500  | 21   | 530        | 2                        | 0    | 3    | 5          | 44                  | 138  | 12   | 194        | 32                        | 6    | 9    | 47         | 776        |
| 07:45 AM                                                   | 10                  | 415  | 28   | 453        | 3                        | 1    | 5    | 9          | 60                  | 164  | 17   | 241        | 23                        | 5    | 4    | 32         | 735        |
| Total Volume                                               | 53                  | 1809 | 103  | 1965       | 12                       | 1    | 16   | 29         | 171                 | 593  | 40   | 804        | 108                       | 19   | 21   | 148        | 2946       |
| % App. Total                                               | 2.7                 | 92.1 | 5.2  |            | 41.4                     | 3.4  | 55.2 |            | 21.3                | 73.8 | 5    |            | 73                        | 12.8 | 14.2 |            |            |
| PHF                                                        | .736                | .905 | .920 | .927       | .750                     | .250 | .800 | .806       | .713                | .904 | .588 | .834       | .794                      | .792 | .583 | .787       | .949       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 7\_US 29 & Boulders Rd\_Briarwood Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Boulders Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Briarwood Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|--------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                    | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 6                   | 212  | 1    | 0    | 219        | 26                       | 3    | 69   | 0    | 98         | 5                   | 392  | 29   | 0    | 426        | 21                        | 1    | 9    | 0    | 31         | 774        |
| 04:15 PM    | 7                   | 201  | 0    | 0    | 208        | 25                       | 3    | 47   | 0    | 75         | 3                   | 389  | 28   | 0    | 420        | 13                        | 0    | 10   | 0    | 23         | 726        |
| 04:30 PM    | 8                   | 263  | 1    | 0    | 272        | 26                       | 1    | 37   | 0    | 64         | 1                   | 436  | 26   | 0    | 463        | 13                        | 1    | 8    | 0    | 22         | 821        |
| 04:45 PM    | 13                  | 234  | 0    | 0    | 247        | 16                       | 4    | 39   | 0    | 59         | 8                   | 440  | 28   | 0    | 476        | 20                        | 2    | 12   | 0    | 34         | 816        |
| Total       | 34                  | 910  | 2    | 0    | 946        | 93                       | 11   | 192  | 0    | 296        | 17                  | 1657 | 111  | 0    | 1785       | 67                        | 4    | 39   | 0    | 110        | 3137       |
| 05:00 PM    | 5                   | 212  | 2    | 0    | 219        | 14                       | 4    | 37   | 0    | 55         | 1                   | 502  | 25   | 0    | 528        | 15                        | 1    | 5    | 0    | 21         | 823        |
| 05:15 PM    | 6                   | 208  | 2    | 0    | 216        | 26                       | 3    | 30   | 0    | 59         | 3                   | 450  | 36   | 0    | 489        | 25                        | 0    | 12   | 0    | 37         | 801        |
| 05:30 PM    | 7                   | 203  | 7    | 0    | 217        | 9                        | 1    | 30   | 0    | 40         | 2                   | 444  | 22   | 0    | 468        | 13                        | 0    | 3    | 0    | 16         | 741        |
| 05:45 PM    | 8                   | 205  | 2    | 0    | 215        | 8                        | 2    | 20   | 0    | 30         | 2                   | 391  | 23   | 0    | 416        | 12                        | 0    | 7    | 0    | 19         | 680        |
| Total       | 26                  | 828  | 13   | 0    | 867        | 57                       | 10   | 117  | 0    | 184        | 8                   | 1787 | 106  | 0    | 1901       | 65                        | 1    | 27   | 0    | 93         | 3045       |
| Grand Total | 60                  | 1738 | 15   | 0    | 1813       | 150                      | 21   | 309  | 0    | 480        | 25                  | 3444 | 217  | 0    | 3686       | 132                       | 5    | 66   | 0    | 203        | 6182       |
| Apprch %    | 3.3                 | 95.9 | 0.8  | 0    |            | 31.2                     | 4.4  | 64.4 | 0    |            | 0.7                 | 93.4 | 5.9  | 0    |            | 65                        | 2.5  | 32.5 | 0    |            |            |
| Total %     | 1                   | 28.1 | 0.2  | 0    | 29.3       | 2.4                      | 0.3  | 5    | 0    | 7.8        | 0.4                 | 55.7 | 3.5  | 0    | 59.6       | 2.1                       | 0.1  | 1.1  | 0    | 3.3        |            |

|                                                            | US 29<br>Southbound |            |          |            | Boulders Rd<br>Westbound |          |           |            | US 29<br>Northbound |            |           |            | Briarwood Dr<br>Eastbound |          |           |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|--------------------------|----------|-----------|------------|---------------------|------------|-----------|------------|---------------------------|----------|-----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                    | Thru     | Left      | App. Total | Right               | Thru       | Left      | App. Total | Right                     | Thru     | Left      | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                          |          |           |            |                     |            |           |            |                           |          |           |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                          |          |           |            |                     |            |           |            |                           |          |           |            |            |
| 04:30 PM                                                   | 8                   | <b>263</b> | 1        | <b>272</b> | <b>26</b>                | 1        | 37        | <b>64</b>  | 1                   | 436        | 26        | 463        | 13                        | 1        | 8         | 22         | 821        |
| 04:45 PM                                                   | <b>13</b>           | 234        | 0        | 247        | 16                       | <b>4</b> | <b>39</b> | 59         | <b>8</b>            | 440        | 28        | 476        | 20                        | <b>2</b> | <b>12</b> | 34         | 816        |
| 05:00 PM                                                   | 5                   | 212        | <b>2</b> | 219        | 14                       | 4        | 37        | 55         | 1                   | <b>502</b> | <b>25</b> | <b>528</b> | 15                        | 1        | 5         | 21         | <b>823</b> |
| 05:15 PM                                                   | 6                   | 208        | 2        | 216        | 26                       | 3        | 30        | 59         | 3                   | 450        | <b>36</b> | 489        | <b>25</b>                 | 0        | 12        | <b>37</b>  | 801        |
| Total Volume                                               | 32                  | 917        | 5        | 954        | 82                       | 12       | 143       | 237        | 13                  | 1828       | 115       | 1956       | 73                        | 4        | 37        | 114        | 3261       |
| % App. Total                                               | 3.4                 | 96.1       | 0.5      |            | 34.6                     | 5.1      | 60.3      |            | 0.7                 | 93.5       | 5.9       |            | 64                        | 3.5      | 32.5      |            |            |
| PHF                                                        | .615                | .872       | .625     | .877       | .788                     | .750     | .917      | .926       | .406                | .910       | .799      | .926       | .730                      | .500     | .771      | .770       | .991       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 7\_US 29 & Boulders Rd\_Briarwood Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Boulders Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Briarwood Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|--------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                    | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 14   | 0    | 0    | 14         | 0                        | 0    | 0    | 0    | 0          | 0                   | 11   | 0    | 0    | 11         | 2                         | 0    | 0    | 0    | 2          | 27         |
| 04:15 PM    | 0                   | 13   | 0    | 0    | 13         | 0                        | 0    | 0    | 0    | 0          | 0                   | 10   | 0    | 0    | 10         | 0                         | 0    | 0    | 0    | 0          | 23         |
| 04:30 PM    | 0                   | 6    | 0    | 0    | 6          | 0                        | 0    | 0    | 0    | 0          | 0                   | 16   | 2    | 0    | 18         | 2                         | 0    | 0    | 0    | 2          | 26         |
| 04:45 PM    | 0                   | 12   | 0    | 0    | 12         | 0                        | 0    | 0    | 0    | 0          | 0                   | 13   | 0    | 0    | 13         | 3                         | 0    | 0    | 0    | 3          | 28         |
| Total       | 0                   | 45   | 0    | 0    | 45         | 0                        | 0    | 0    | 0    | 0          | 0                   | 50   | 2    | 0    | 52         | 7                         | 0    | 0    | 0    | 7          | 104        |
| 05:00 PM    | 1                   | 6    | 0    | 0    | 7          | 0                        | 0    | 0    | 0    | 0          | 0                   | 7    | 0    | 0    | 7          | 1                         | 0    | 0    | 0    | 1          | 15         |
| 05:15 PM    | 0                   | 6    | 0    | 0    | 6          | 0                        | 0    | 0    | 0    | 0          | 0                   | 6    | 1    | 0    | 7          | 0                         | 0    | 0    | 0    | 0          | 13         |
| 05:30 PM    | 0                   | 7    | 0    | 0    | 7          | 0                        | 0    | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 0                         | 0    | 0    | 0    | 0          | 16         |
| 05:45 PM    | 0                   | 5    | 0    | 0    | 5          | 0                        | 0    | 0    | 0    | 0          | 0                   | 5    | 0    | 0    | 5          | 0                         | 0    | 0    | 0    | 0          | 10         |
| Total       | 1                   | 24   | 0    | 0    | 25         | 0                        | 0    | 0    | 0    | 0          | 0                   | 27   | 1    | 0    | 28         | 1                         | 0    | 0    | 0    | 1          | 54         |
| Grand Total | 1                   | 69   | 0    | 0    | 70         | 0                        | 0    | 0    | 0    | 0          | 0                   | 77   | 3    | 0    | 80         | 8                         | 0    | 0    | 0    | 8          | 158        |
| Apprch %    | 1.4                 | 98.6 | 0    | 0    |            | 0                        | 0    | 0    | 0    |            | 0                   | 96.2 | 3.8  | 0    |            | 100                       | 0    | 0    | 0    |            |            |
| Total %     | 0.6                 | 43.7 | 0    | 0    | 44.3       | 0                        | 0    | 0    | 0    | 0          | 0                   | 48.7 | 1.9  | 0    | 50.6       | 5.1                       | 0    | 0    | 0    | 5.1        |            |

|                                                            | US 29<br>Southbound |           |      |            | Boulders Rd<br>Westbound |      |      |            | US 29<br>Northbound |           |          |            | Briarwood Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|-----------|------|------------|--------------------------|------|------|------------|---------------------|-----------|----------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru      | Left | App. Total | Right                    | Thru | Left | App. Total | Right               | Thru      | Left     | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |           |      |            |                          |      |      |            |                     |           |          |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |           |      |            |                          |      |      |            |                     |           |          |            |                           |      |      |            |            |
| 04:00 PM                                                   | 0                   | <b>14</b> | 0    | <b>14</b>  | 0                        | 0    | 0    | 0          | 0                   | 11        | 0        | 11         | 2                         | 0    | 0    | 2          | 27         |
| 04:15 PM                                                   | 0                   | 13        | 0    | 13         | 0                        | 0    | 0    | 0          | 0                   | 10        | 0        | 10         | 0                         | 0    | 0    | 0          | 23         |
| 04:30 PM                                                   | 0                   | 6         | 0    | 6          | 0                        | 0    | 0    | 0          | 0                   | <b>16</b> | <b>2</b> | <b>18</b>  | 2                         | 0    | 0    | 2          | 26         |
| 04:45 PM                                                   | 0                   | 12        | 0    | 12         | 0                        | 0    | 0    | 0          | 0                   | 13        | 0        | 13         | <b>3</b>                  | 0    | 0    | <b>3</b>   | <b>28</b>  |
| Total Volume                                               | 0                   | 45        | 0    | 45         | 0                        | 0    | 0    | 0          | 0                   | 50        | 2        | 52         | 7                         | 0    | 0    | 7          | 104        |
| % App. Total                                               | 0                   | 100       | 0    |            | 0                        | 0    | 0    |            | 0                   | 96.2      | 3.8      |            | 100                       | 0    | 0    |            |            |
| PHF                                                        | .000                | .804      | .000 | .804       | .000                     | .000 | .000 | .000       | .000                | .781      | .250     | .722       | .583                      | .000 | .000 | .583       | .929       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 7\_US 29 & Boulders Rd\_Briarwood Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Boulders Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Briarwood Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|--------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                    | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 6                   | 226  | 1    | 0    | 233        | 26                       | 3    | 69   | 0    | 98         | 5                   | 403  | 29   | 0    | 437        | 23                        | 1    | 9    | 0    | 33         | 801        |
| 04:15 PM    | 7                   | 214  | 0    | 0    | 221        | 25                       | 3    | 47   | 0    | 75         | 3                   | 399  | 28   | 0    | 430        | 13                        | 0    | 10   | 0    | 23         | 749        |
| 04:30 PM    | 8                   | 269  | 1    | 0    | 278        | 26                       | 1    | 37   | 0    | 64         | 1                   | 452  | 28   | 0    | 481        | 15                        | 1    | 8    | 0    | 24         | 847        |
| 04:45 PM    | 13                  | 246  | 0    | 0    | 259        | 16                       | 4    | 39   | 0    | 59         | 8                   | 453  | 28   | 0    | 489        | 23                        | 2    | 12   | 0    | 37         | 844        |
| Total       | 34                  | 955  | 2    | 0    | 991        | 93                       | 11   | 192  | 0    | 296        | 17                  | 1707 | 113  | 0    | 1837       | 74                        | 4    | 39   | 0    | 117        | 3241       |
| 05:00 PM    | 6                   | 218  | 2    | 0    | 226        | 14                       | 4    | 37   | 0    | 55         | 1                   | 509  | 25   | 0    | 535        | 16                        | 1    | 5    | 0    | 22         | 838        |
| 05:15 PM    | 6                   | 214  | 2    | 0    | 222        | 26                       | 3    | 30   | 0    | 59         | 3                   | 456  | 37   | 0    | 496        | 25                        | 0    | 12   | 0    | 37         | 814        |
| 05:30 PM    | 7                   | 210  | 7    | 0    | 224        | 9                        | 1    | 30   | 0    | 40         | 2                   | 453  | 22   | 0    | 477        | 13                        | 0    | 3    | 0    | 16         | 757        |
| 05:45 PM    | 8                   | 210  | 2    | 0    | 220        | 8                        | 2    | 20   | 0    | 30         | 2                   | 396  | 23   | 0    | 421        | 12                        | 0    | 7    | 0    | 19         | 690        |
| Total       | 27                  | 852  | 13   | 0    | 892        | 57                       | 10   | 117  | 0    | 184        | 8                   | 1814 | 107  | 0    | 1929       | 66                        | 1    | 27   | 0    | 94         | 3099       |
| Grand Total | 61                  | 1807 | 15   | 0    | 1883       | 150                      | 21   | 309  | 0    | 480        | 25                  | 3521 | 220  | 0    | 3766       | 140                       | 5    | 66   | 0    | 211        | 6340       |
| Apprch %    | 3.2                 | 96   | 0.8  | 0    |            | 31.2                     | 4.4  | 64.4 | 0    |            | 0.7                 | 93.5 | 5.8  | 0    |            | 66.4                      | 2.4  | 31.3 | 0    |            |            |
| Total %     | 1                   | 28.5 | 0.2  | 0    | 29.7       | 2.4                      | 0.3  | 4.9  | 0    | 7.6        | 0.4                 | 55.5 | 3.5  | 0    | 59.4       | 2.2                       | 0.1  | 1    | 0    | 3.3        |            |

|                                                            | US 29<br>Southbound |            |          |            | Boulders Rd<br>Westbound |          |           |            | US 29<br>Northbound |            |           |            | Briarwood Dr<br>Eastbound |          |           |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|--------------------------|----------|-----------|------------|---------------------|------------|-----------|------------|---------------------------|----------|-----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                    | Thru     | Left      | App. Total | Right               | Thru       | Left      | App. Total | Right                     | Thru     | Left      | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                          |          |           |            |                     |            |           |            |                           |          |           |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                          |          |           |            |                     |            |           |            |                           |          |           |            |            |
| 04:30 PM                                                   | 8                   | <b>269</b> | 1        | <b>278</b> | <b>26</b>                | 1        | 37        | <b>64</b>  | 1                   | 452        | 28        | 481        | 15                        | 1        | 8         | 24         | <b>847</b> |
| 04:45 PM                                                   | <b>13</b>           | 246        | 0        | 259        | 16                       | <b>4</b> | <b>39</b> | 59         | <b>8</b>            | 453        | 28        | 489        | 23                        | <b>2</b> | <b>12</b> | <b>37</b>  | 844        |
| 05:00 PM                                                   | 6                   | 218        | <b>2</b> | 226        | 14                       | 4        | 37        | 55         | 1                   | <b>509</b> | 25        | <b>535</b> | 16                        | 1        | 5         | 22         | 838        |
| 05:15 PM                                                   | 6                   | 214        | 2        | 222        | 26                       | 3        | 30        | 59         | 3                   | 456        | <b>37</b> | 496        | <b>25</b>                 | 0        | 12        | 37         | 814        |
| Total Volume                                               | 33                  | 947        | 5        | 985        | 82                       | 12       | 143       | 237        | 13                  | 1870       | 118       | 2001       | 79                        | 4        | 37        | 120        | 3343       |
| % App. Total                                               | 3.4                 | 96.1       | 0.5      |            | 34.6                     | 5.1      | 60.3      |            | 0.6                 | 93.5       | 5.9       |            | 65.8                      | 3.3      | 30.8      |            |            |
| PHF                                                        | .635                | .880       | .625     | .886       | .788                     | .750     | .917      | .926       | .406                | .918       | .797      | .935       | .790                      | .500     | .771      | .811       | .987       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 8\_US 29 & Camelot Dr AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Camelot Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 383  | 1    | 0    | 384        | 0                     | 0    | 0    | 0    | 0          | 2                   | 173  | 1    | 0    | 176        | 13                      | 0    | 2    | 0    | 15         | 575        |
| 07:15 AM    | 1                   | 517  | 4    | 0    | 522        | 0                     | 0    | 1    | 0    | 1          | 1                   | 163  | 7    | 0    | 171        | 9                       | 0    | 2    | 0    | 11         | 705        |
| 07:30 AM    | 0                   | 526  | 5    | 0    | 531        | 0                     | 0    | 2    | 0    | 2          | 0                   | 176  | 3    | 0    | 179        | 9                       | 0    | 0    | 0    | 9          | 721        |
| 07:45 AM    | 2                   | 433  | 3    | 0    | 438        | 0                     | 0    | 1    | 0    | 1          | 3                   | 229  | 7    | 0    | 239        | 9                       | 0    | 2    | 0    | 11         | 689        |
| Total       | 3                   | 1859 | 13   | 0    | 1875       | 0                     | 0    | 4    | 0    | 4          | 6                   | 741  | 18   | 0    | 765        | 40                      | 0    | 6    | 0    | 46         | 2690       |
| 08:00 AM    | 0                   | 370  | 3    | 0    | 373        | 0                     | 0    | 1    | 0    | 1          | 2                   | 217  | 5    | 0    | 224        | 11                      | 0    | 1    | 0    | 12         | 610        |
| 08:15 AM    | 2                   | 380  | 2    | 0    | 384        | 1                     | 0    | 1    | 0    | 2          | 1                   | 213  | 7    | 0    | 221        | 8                       | 0    | 2    | 0    | 10         | 617        |
| 08:30 AM    | 3                   | 362  | 3    | 0    | 368        | 0                     | 0    | 1    | 0    | 1          | 3                   | 204  | 3    | 0    | 210        | 11                      | 0    | 2    | 0    | 13         | 592        |
| 08:45 AM    | 1                   | 357  | 2    | 0    | 360        | 0                     | 0    | 0    | 0    | 0          | 3                   | 218  | 5    | 0    | 226        | 7                       | 0    | 1    | 0    | 8          | 594        |
| Total       | 6                   | 1469 | 10   | 0    | 1485       | 1                     | 0    | 3    | 0    | 4          | 9                   | 852  | 20   | 0    | 881        | 37                      | 0    | 6    | 0    | 43         | 2413       |
| Grand Total | 9                   | 3328 | 23   | 0    | 3360       | 1                     | 0    | 7    | 0    | 8          | 15                  | 1593 | 38   | 0    | 1646       | 77                      | 0    | 12   | 0    | 89         | 5103       |
| Apprch %    | 0.3                 | 99   | 0.7  | 0    |            | 12.5                  | 0    | 87.5 | 0    |            | 0.9                 | 96.8 | 2.3  | 0    |            | 86.5                    | 0    | 13.5 | 0    |            |            |
| Total %     | 0.2                 | 65.2 | 0.5  | 0    | 65.8       | 0                     | 0    | 0.1  | 0    | 0.2        | 0.3                 | 31.2 | 0.7  | 0    | 32.3       | 1.5                     | 0    | 0.2  | 0    | 1.7        |            |

|                                                            | US 29<br>Southbound |            |          |            | Driveway<br>Westbound |      |          |            | US 29<br>Northbound |            |      |            | Camelot Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-----------------------|------|----------|------------|---------------------|------------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                 | Thru | Left     | App. Total | Right               | Thru       | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |            |          |            |                       |      |          |            |                     |            |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |            |          |            |                       |      |          |            |                     |            |      |            |                         |      |      |            |            |
| 07:15 AM                                                   | 1                   | 517        | 4        | 522        | 0                     | 0    | 1        | 1          | 1                   | 163        | 7    | 171        | 9                       | 0    | 2    | 11         | 705        |
| 07:30 AM                                                   | 0                   | <b>526</b> | <b>5</b> | <b>531</b> | 0                     | 0    | <b>2</b> | <b>2</b>   | 0                   | 176        | 3    | 179        | 9                       | 0    | 0    | 9          | <b>721</b> |
| 07:45 AM                                                   | <b>2</b>            | 433        | 3        | 438        | 0                     | 0    | 1        | 1          | <b>3</b>            | <b>229</b> | 7    | <b>239</b> | 9                       | 0    | 2    | 11         | 689        |
| 08:00 AM                                                   | 0                   | 370        | 3        | 373        | 0                     | 0    | 1        | 1          | 2                   | 217        | 5    | 224        | <b>11</b>               | 0    | 1    | <b>12</b>  | 610        |
| Total Volume                                               | 3                   | 1846       | 15       | 1864       | 0                     | 0    | 5        | 5          | 6                   | 785        | 22   | 813        | 38                      | 0    | 5    | 43         | 2725       |
| % App. Total                                               | 0.2                 | 99         | 0.8      |            | 0                     | 0    | 100      |            | 0.7                 | 96.6       | 2.7  |            | 88.4                    | 0    | 11.6 |            |            |
| PHF                                                        | .375                | .877       | .750     | .878       | .000                  | .000 | .625     | .625       | .500                | .857       | .786 | .850       | .864                    | .000 | .625 | .896       | .945       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 8\_US 29 & Camelot Dr AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Camelot Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 18   | 0    | 0    | 18         | 1                     | 0    | 0    | 0    | 1          | 0                   | 16   | 0    | 0    | 16         | 0                       | 0    | 0    | 0    | 0          | 35         |
| 07:15 AM    | 1                   | 30   | 0    | 0    | 31         | 0                     | 0    | 0    | 0    | 0          | 0                   | 21   | 1    | 0    | 22         | 3                       | 0    | 0    | 0    | 3          | 56         |
| 07:30 AM    | 1                   | 15   | 0    | 0    | 16         | 0                     | 0    | 0    | 0    | 0          | 0                   | 12   | 0    | 0    | 12         | 0                       | 0    | 1    | 0    | 1          | 29         |
| 07:45 AM    | 0                   | 14   | 0    | 0    | 14         | 2                     | 0    | 0    | 0    | 2          | 0                   | 20   | 0    | 0    | 20         | 0                       | 0    | 0    | 0    | 0          | 36         |
| Total       | 2                   | 77   | 0    | 0    | 79         | 3                     | 0    | 0    | 0    | 3          | 0                   | 69   | 1    | 0    | 70         | 3                       | 0    | 1    | 0    | 4          | 156        |
| 08:00 AM    | 0                   | 20   | 0    | 0    | 20         | 0                     | 0    | 0    | 0    | 0          | 1                   | 13   | 0    | 0    | 14         | 0                       | 0    | 0    | 0    | 0          | 34         |
| 08:15 AM    | 0                   | 18   | 0    | 0    | 18         | 0                     | 0    | 0    | 0    | 0          | 1                   | 23   | 0    | 0    | 24         | 0                       | 0    | 0    | 0    | 0          | 42         |
| 08:30 AM    | 0                   | 24   | 0    | 0    | 24         | 1                     | 0    | 0    | 0    | 1          | 0                   | 20   | 0    | 0    | 20         | 0                       | 0    | 0    | 0    | 0          | 45         |
| 08:45 AM    | 0                   | 18   | 0    | 0    | 18         | 1                     | 0    | 0    | 0    | 1          | 0                   | 25   | 0    | 0    | 25         | 0                       | 0    | 0    | 0    | 0          | 44         |
| Total       | 0                   | 80   | 0    | 0    | 80         | 2                     | 0    | 0    | 0    | 2          | 2                   | 81   | 0    | 0    | 83         | 0                       | 0    | 0    | 0    | 0          | 165        |
| Grand Total | 2                   | 157  | 0    | 0    | 159        | 5                     | 0    | 0    | 0    | 5          | 2                   | 150  | 1    | 0    | 153        | 3                       | 0    | 1    | 0    | 4          | 321        |
| Apprch %    | 1.3                 | 98.7 | 0    | 0    |            | 100                   | 0    | 0    | 0    |            | 1.3                 | 98   | 0.7  | 0    |            | 75                      | 0    | 25   | 0    |            |            |
| Total %     | 0.6                 | 48.9 | 0    | 0    | 49.5       | 1.6                   | 0    | 0    | 0    | 1.6        | 0.6                 | 46.7 | 0.3  | 0    | 47.7       | 0.9                     | 0    | 0.3  | 0    | 1.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Camelot Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 08:00 AM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 08:00 AM                                                   | 0                   | 20   | 0    | 20         | 0                     | 0    | 0    | 0          | 1                   | 13   | 0    | 14         | 0                       | 0    | 0    | 0          | 34         |
| 08:15 AM                                                   | 0                   | 18   | 0    | 18         | 0                     | 0    | 0    | 0          | 1                   | 23   | 0    | 24         | 0                       | 0    | 0    | 0          | 42         |
| 08:30 AM                                                   | 0                   | 24   | 0    | 24         | 1                     | 0    | 0    | 1          | 0                   | 20   | 0    | 20         | 0                       | 0    | 0    | 0          | 45         |
| 08:45 AM                                                   | 0                   | 18   | 0    | 18         | 1                     | 0    | 0    | 1          | 0                   | 25   | 0    | 25         | 0                       | 0    | 0    | 0          | 44         |
| Total Volume                                               | 0                   | 80   | 0    | 80         | 2                     | 0    | 0    | 2          | 2                   | 81   | 0    | 83         | 0                       | 0    | 0    | 0          | 165        |
| % App. Total                                               | 0                   | 100  | 0    |            | 100                   | 0    | 0    |            | 2.4                 | 97.6 | 0    |            | 0                       | 0    | 0    |            |            |
| PHF                                                        | .000                | .833 | .000 | .833       | .500                  | .000 | .000 | .500       | .500                | .810 | .000 | .830       | .000                    | .000 | .000 | .000       | .917       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 8\_US 29 & Camelot Dr AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Camelot Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 0                   | 401  | 1    | 0    | 402        | 1                     | 0    | 0    | 0    | 1          | 2                   | 189  | 1    | 0    | 192        | 13                      | 0    | 2    | 0    | 15         | 610        |
| 07:15 AM    | 2                   | 547  | 4    | 0    | 553        | 0                     | 0    | 1    | 0    | 1          | 1                   | 184  | 8    | 0    | 193        | 12                      | 0    | 2    | 0    | 14         | 761        |
| 07:30 AM    | 1                   | 541  | 5    | 0    | 547        | 0                     | 0    | 2    | 0    | 2          | 0                   | 188  | 3    | 0    | 191        | 9                       | 0    | 1    | 0    | 10         | 750        |
| 07:45 AM    | 2                   | 447  | 3    | 0    | 452        | 2                     | 0    | 1    | 0    | 3          | 3                   | 249  | 7    | 0    | 259        | 9                       | 0    | 2    | 0    | 11         | 725        |
| Total       | 5                   | 1936 | 13   | 0    | 1954       | 3                     | 0    | 4    | 0    | 7          | 6                   | 810  | 19   | 0    | 835        | 43                      | 0    | 7    | 0    | 50         | 2846       |
| 08:00 AM    | 0                   | 390  | 3    | 0    | 393        | 0                     | 0    | 1    | 0    | 1          | 3                   | 230  | 5    | 0    | 238        | 11                      | 0    | 1    | 0    | 12         | 644        |
| 08:15 AM    | 2                   | 398  | 2    | 0    | 402        | 1                     | 0    | 1    | 0    | 2          | 2                   | 236  | 7    | 0    | 245        | 8                       | 0    | 2    | 0    | 10         | 659        |
| 08:30 AM    | 3                   | 386  | 3    | 0    | 392        | 1                     | 0    | 1    | 0    | 2          | 3                   | 224  | 3    | 0    | 230        | 11                      | 0    | 2    | 0    | 13         | 637        |
| 08:45 AM    | 1                   | 375  | 2    | 0    | 378        | 1                     | 0    | 0    | 0    | 1          | 3                   | 243  | 5    | 0    | 251        | 7                       | 0    | 1    | 0    | 8          | 638        |
| Total       | 6                   | 1549 | 10   | 0    | 1565       | 3                     | 0    | 3    | 0    | 6          | 11                  | 933  | 20   | 0    | 964        | 37                      | 0    | 6    | 0    | 43         | 2578       |
| Grand Total | 11                  | 3485 | 23   | 0    | 3519       | 6                     | 0    | 7    | 0    | 13         | 17                  | 1743 | 39   | 0    | 1799       | 80                      | 0    | 13   | 0    | 93         | 5424       |
| Apprch %    | 0.3                 | 99   | 0.7  | 0    |            | 46.2                  | 0    | 53.8 | 0    |            | 0.9                 | 96.9 | 2.2  | 0    |            | 86                      | 0    | 14   | 0    |            |            |
| Total %     | 0.2                 | 64.3 | 0.4  | 0    | 64.9       | 0.1                   | 0    | 0.1  | 0    | 0.2        | 0.3                 | 32.1 | 0.7  | 0    | 33.2       | 1.5                     | 0    | 0.2  | 0    | 1.7        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Camelot Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 07:15 AM                                                   | 2                   | 547  | 4    | 553        | 0                     | 0    | 1    | 1          | 1                   | 184  | 8    | 193        | 12                      | 0    | 2    | 14         | 761        |
| 07:30 AM                                                   | 1                   | 541  | 5    | 547        | 0                     | 0    | 2    | 2          | 0                   | 188  | 3    | 191        | 9                       | 0    | 1    | 10         | 750        |
| 07:45 AM                                                   | 2                   | 447  | 3    | 452        | 2                     | 0    | 1    | 3          | 3                   | 249  | 7    | 259        | 9                       | 0    | 2    | 11         | 725        |
| 08:00 AM                                                   | 0                   | 390  | 3    | 393        | 0                     | 0    | 1    | 1          | 3                   | 230  | 5    | 238        | 11                      | 0    | 1    | 12         | 644        |
| Total Volume                                               | 5                   | 1925 | 15   | 1945       | 2                     | 0    | 5    | 7          | 7                   | 851  | 23   | 881        | 41                      | 0    | 6    | 47         | 2880       |
| % App. Total                                               | 0.3                 | 99   | 0.8  |            | 28.6                  | 0    | 71.4 |            | 0.8                 | 96.6 | 2.6  |            | 87.2                    | 0    | 12.8 |            |            |
| PHF                                                        | .625                | .880 | .750 | .879       | .250                  | .000 | .625 | .583       | .583                | .854 | .719 | .850       | .854                    | .000 | .750 | .839       | .946       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 8\_US 29 & Camelot Dr PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Camelot Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 4                   | 304  | 0    | 0    | 308        | 3                     | 0    | 0    | 0    | 3          | 0                   | 382  | 11   | 0    | 393        | 8                       | 0    | 1    | 0    | 9          | 713        |
| 04:15 PM    | 3                   | 260  | 0    | 0    | 263        | 4                     | 0    | 3    | 0    | 7          | 0                   | 402  | 12   | 0    | 414        | 12                      | 0    | 0    | 0    | 12         | 696        |
| 04:30 PM    | 1                   | 302  | 0    | 0    | 303        | 4                     | 0    | 4    | 0    | 8          | 0                   | 422  | 19   | 0    | 441        | 4                       | 0    | 1    | 0    | 5          | 757        |
| 04:45 PM    | 2                   | 263  | 1    | 0    | 266        | 2                     | 0    | 1    | 0    | 3          | 2                   | 432  | 14   | 0    | 448        | 13                      | 0    | 1    | 0    | 14         | 731        |
| Total       | 10                  | 1129 | 1    | 0    | 1140       | 13                    | 0    | 8    | 0    | 21         | 2                   | 1638 | 56   | 0    | 1696       | 37                      | 0    | 3    | 0    | 40         | 2897       |
| 05:00 PM    | 1                   | 293  | 0    | 0    | 294        | 6                     | 0    | 3    | 0    | 9          | 1                   | 537  | 18   | 0    | 556        | 8                       | 0    | 1    | 0    | 9          | 868        |
| 05:15 PM    | 1                   | 271  | 0    | 0    | 272        | 0                     | 0    | 2    | 0    | 2          | 0                   | 526  | 23   | 0    | 549        | 6                       | 0    | 0    | 0    | 6          | 829        |
| 05:30 PM    | 1                   | 234  | 0    | 0    | 235        | 1                     | 0    | 1    | 0    | 2          | 0                   | 451  | 22   | 0    | 473        | 7                       | 0    | 0    | 0    | 7          | 717        |
| 05:45 PM    | 1                   | 231  | 0    | 0    | 232        | 0                     | 0    | 0    | 0    | 0          | 1                   | 376  | 19   | 0    | 396        | 14                      | 0    | 0    | 0    | 14         | 642        |
| Total       | 4                   | 1029 | 0    | 0    | 1033       | 7                     | 0    | 6    | 0    | 13         | 2                   | 1890 | 82   | 0    | 1974       | 35                      | 0    | 1    | 0    | 36         | 3056       |
| Grand Total | 14                  | 2158 | 1    | 0    | 2173       | 20                    | 0    | 14   | 0    | 34         | 4                   | 3528 | 138  | 0    | 3670       | 72                      | 0    | 4    | 0    | 76         | 5953       |
| Apprch %    | 0.6                 | 99.3 | 0    | 0    |            | 58.8                  | 0    | 41.2 | 0    |            | 0.1                 | 96.1 | 3.8  | 0    |            | 94.7                    | 0    | 5.3  | 0    |            |            |
| Total %     | 0.2                 | 36.3 | 0    | 0    | 36.5       | 0.3                   | 0    | 0.2  | 0    | 0.6        | 0.1                 | 59.3 | 2.3  | 0    | 61.6       | 1.2                     | 0    | 0.1  | 0    | 1.3        |            |

|                                                            | US 29<br>Southbound |            |          |            | Driveway<br>Westbound |      |          |            | US 29<br>Northbound |            |           |            | Camelot Dr<br>Eastbound |      |          |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|-----------------------|------|----------|------------|---------------------|------------|-----------|------------|-------------------------|------|----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                 | Thru | Left     | App. Total | Right               | Thru       | Left      | App. Total | Right                   | Thru | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                       |      |          |            |                     |            |           |            |                         |      |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                       |      |          |            |                     |            |           |            |                         |      |          |            |            |
| 04:30 PM                                                   | 1                   | <b>302</b> | 0        | <b>303</b> | 4                     | 0    | <b>4</b> | 8          | 0                   | 422        | 19        | 441        | 4                       | 0    | <b>1</b> | 5          | 757        |
| 04:45 PM                                                   | <b>2</b>            | 263        | <b>1</b> | 266        | 2                     | 0    | 1        | 3          | <b>2</b>            | 432        | 14        | 448        | <b>13</b>               | 0    | 1        | <b>14</b>  | 731        |
| 05:00 PM                                                   | 1                   | 293        | 0        | 294        | <b>6</b>              | 0    | 3        | <b>9</b>   | 1                   | <b>537</b> | 18        | <b>556</b> | 8                       | 0    | 1        | 9          | <b>868</b> |
| 05:15 PM                                                   | 1                   | 271        | 0        | 272        | 0                     | 0    | 2        | 2          | 0                   | 526        | <b>23</b> | 549        | 6                       | 0    | 0        | 6          | 829        |
| Total Volume                                               | 5                   | 1129       | 1        | 1135       | 12                    | 0    | 10       | 22         | 3                   | 1917       | 74        | 1994       | 31                      | 0    | 3        | 34         | 3185       |
| % App. Total                                               | 0.4                 | 99.5       | 0.1      |            | 54.5                  | 0    | 45.5     |            | 0.2                 | 96.1       | 3.7       |            | 91.2                    | 0    | 8.8      |            |            |
| PHF                                                        | .625                | .935       | .250     | .936       | .500                  | .000 | .625     | .611       | .375                | .892       | .804      | .897       | .596                    | .000 | .750     | .607       | .917       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 8\_US 29 & Camelot Dr PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Camelot Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 13   | 0    | 0    | 13         | 0                     | 0    | 0    | 0    | 0          | 1                   | 17   | 1    | 0    | 19         | 0                       | 0    | 0    | 0    | 0          | 32         |
| 04:15 PM    | 0                   | 11   | 1    | 0    | 12         | 0                     | 0    | 1    | 0    | 1          | 1                   | 11   | 0    | 0    | 12         | 1                       | 0    | 0    | 0    | 1          | 26         |
| 04:30 PM    | 1                   | 22   | 0    | 0    | 23         | 2                     | 0    | 0    | 0    | 2          | 1                   | 15   | 0    | 0    | 16         | 0                       | 0    | 0    | 0    | 0          | 41         |
| 04:45 PM    | 0                   | 9    | 0    | 0    | 9          | 0                     | 0    | 0    | 0    | 0          | 0                   | 18   | 1    | 0    | 19         | 1                       | 0    | 0    | 0    | 1          | 29         |
| Total       | 1                   | 55   | 1    | 0    | 57         | 2                     | 0    | 1    | 0    | 3          | 3                   | 61   | 2    | 0    | 66         | 2                       | 0    | 0    | 0    | 2          | 128        |
| 05:00 PM    | 0                   | 11   | 0    | 0    | 11         | 0                     | 0    | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 0                       | 0    | 0    | 0    | 0          | 20         |
| 05:15 PM    | 0                   | 4    | 0    | 0    | 4          | 0                     | 0    | 0    | 0    | 0          | 0                   | 8    | 0    | 0    | 8          | 0                       | 0    | 0    | 0    | 0          | 12         |
| 05:30 PM    | 0                   | 5    | 0    | 0    | 5          | 0                     | 0    | 0    | 0    | 0          | 0                   | 5    | 0    | 0    | 5          | 0                       | 0    | 0    | 0    | 0          | 10         |
| 05:45 PM    | 0                   | 6    | 0    | 0    | 6          | 0                     | 0    | 0    | 0    | 0          | 0                   | 4    | 0    | 0    | 4          | 0                       | 0    | 0    | 0    | 0          | 10         |
| Total       | 0                   | 26   | 0    | 0    | 26         | 0                     | 0    | 0    | 0    | 0          | 0                   | 26   | 0    | 0    | 26         | 0                       | 0    | 0    | 0    | 0          | 52         |
| Grand Total | 1                   | 81   | 1    | 0    | 83         | 2                     | 0    | 1    | 0    | 3          | 3                   | 87   | 2    | 0    | 92         | 2                       | 0    | 0    | 0    | 2          | 180        |
| Apprch %    | 1.2                 | 97.6 | 1.2  | 0    |            | 66.7                  | 0    | 33.3 | 0    |            | 3.3                 | 94.6 | 2.2  | 0    |            | 100                     | 0    | 0    | 0    |            |            |
| Total %     | 0.6                 | 45   | 0.6  | 0    | 46.1       | 1.1                   | 0    | 0.6  | 0    | 1.7        | 1.7                 | 48.3 | 1.1  | 0    | 51.1       | 1.1                     | 0    | 0    | 0    | 1.1        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Camelot Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 04:00 PM                                                   | 0                   | 13   | 0    | 13         | 0                     | 0    | 0    | 0          | 1                   | 17   | 1    | 19         | 0                       | 0    | 0    | 0          | 32         |
| 04:15 PM                                                   | 0                   | 11   | 1    | 12         | 0                     | 0    | 1    | 1          | 1                   | 11   | 0    | 12         | 1                       | 0    | 0    | 1          | 26         |
| 04:30 PM                                                   | 1                   | 22   | 0    | 23         | 2                     | 0    | 0    | 2          | 1                   | 15   | 0    | 16         | 0                       | 0    | 0    | 0          | 41         |
| 04:45 PM                                                   | 0                   | 9    | 0    | 9          | 0                     | 0    | 0    | 0          | 0                   | 18   | 1    | 19         | 1                       | 0    | 0    | 1          | 29         |
| Total Volume                                               | 1                   | 55   | 1    | 57         | 2                     | 0    | 1    | 3          | 3                   | 61   | 2    | 66         | 2                       | 0    | 0    | 2          | 128        |
| % App. Total                                               | 1.8                 | 96.5 | 1.8  |            | 66.7                  | 0    | 33.3 |            | 4.5                 | 92.4 | 3    |            | 100                     | 0    | 0    |            |            |
| PHF                                                        | .250                | .625 | .250 | .620       | .250                  | .000 | .250 | .375       | .750                | .847 | .500 | .868       | .500                    | .000 | .000 | .500       | .780       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 8\_US 29 & Camelot Dr PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Driveway<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Camelot Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-----------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                 | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 4                   | 317  | 0    | 0    | 321        | 3                     | 0    | 0    | 0    | 3          | 1                   | 399  | 12   | 0    | 412        | 8                       | 0    | 1    | 0    | 9          | 745        |
| 04:15 PM    | 3                   | 271  | 1    | 0    | 275        | 4                     | 0    | 4    | 0    | 8          | 1                   | 413  | 12   | 0    | 426        | 13                      | 0    | 0    | 0    | 13         | 722        |
| 04:30 PM    | 2                   | 324  | 0    | 0    | 326        | 6                     | 0    | 4    | 0    | 10         | 1                   | 437  | 19   | 0    | 457        | 4                       | 0    | 1    | 0    | 5          | 798        |
| 04:45 PM    | 2                   | 272  | 1    | 0    | 275        | 2                     | 0    | 1    | 0    | 3          | 2                   | 450  | 15   | 0    | 467        | 14                      | 0    | 1    | 0    | 15         | 760        |
| Total       | 11                  | 1184 | 2    | 0    | 1197       | 15                    | 0    | 9    | 0    | 24         | 5                   | 1699 | 58   | 0    | 1762       | 39                      | 0    | 3    | 0    | 42         | 3025       |
| 05:00 PM    | 1                   | 304  | 0    | 0    | 305        | 6                     | 0    | 3    | 0    | 9          | 1                   | 546  | 18   | 0    | 565        | 8                       | 0    | 1    | 0    | 9          | 888        |
| 05:15 PM    | 1                   | 275  | 0    | 0    | 276        | 0                     | 0    | 2    | 0    | 2          | 0                   | 534  | 23   | 0    | 557        | 6                       | 0    | 0    | 0    | 6          | 841        |
| 05:30 PM    | 1                   | 239  | 0    | 0    | 240        | 1                     | 0    | 1    | 0    | 2          | 0                   | 456  | 22   | 0    | 478        | 7                       | 0    | 0    | 0    | 7          | 727        |
| 05:45 PM    | 1                   | 237  | 0    | 0    | 238        | 0                     | 0    | 0    | 0    | 0          | 1                   | 380  | 19   | 0    | 400        | 14                      | 0    | 0    | 0    | 14         | 652        |
| Total       | 4                   | 1055 | 0    | 0    | 1059       | 7                     | 0    | 6    | 0    | 13         | 2                   | 1916 | 82   | 0    | 2000       | 35                      | 0    | 1    | 0    | 36         | 3108       |
| Grand Total | 15                  | 2239 | 2    | 0    | 2256       | 22                    | 0    | 15   | 0    | 37         | 7                   | 3615 | 140  | 0    | 3762       | 74                      | 0    | 4    | 0    | 78         | 6133       |
| Apprch %    | 0.7                 | 99.2 | 0.1  | 0    |            | 59.5                  | 0    | 40.5 | 0    |            | 0.2                 | 96.1 | 3.7  | 0    |            | 94.9                    | 0    | 5.1  | 0    |            |            |
| Total %     | 0.2                 | 36.5 | 0    | 0    | 36.8       | 0.4                   | 0    | 0.2  | 0    | 0.6        | 0.1                 | 58.9 | 2.3  | 0    | 61.3       | 1.2                     | 0    | 0.1  | 0    | 1.3        |            |

|                                                            | US 29<br>Southbound |      |      |            | Driveway<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Camelot Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-----------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                 | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                       |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 04:30 PM                                                   | 2                   | 324  | 0    | 326        | 6                     | 0    | 4    | 10         | 1                   | 437  | 19   | 457        | 4                       | 0    | 1    | 5          | 798        |
| 04:45 PM                                                   | 2                   | 272  | 1    | 275        | 2                     | 0    | 1    | 3          | 2                   | 450  | 15   | 467        | 14                      | 0    | 1    | 15         | 760        |
| 05:00 PM                                                   | 1                   | 304  | 0    | 305        | 6                     | 0    | 3    | 9          | 1                   | 546  | 18   | 565        | 8                       | 0    | 1    | 9          | 888        |
| 05:15 PM                                                   | 1                   | 275  | 0    | 276        | 0                     | 0    | 2    | 2          | 0                   | 534  | 23   | 557        | 6                       | 0    | 0    | 6          | 841        |
| Total Volume                                               | 6                   | 1175 | 1    | 1182       | 14                    | 0    | 10   | 24         | 4                   | 1967 | 75   | 2046       | 32                      | 0    | 3    | 35         | 3287       |
| % App. Total                                               | 0.5                 | 99.4 | 0.1  |            | 58.3                  | 0    | 41.7 |            | 0.2                 | 96.1 | 3.7  |            | 91.4                    | 0    | 8.6  |            |            |
| PHF                                                        | .750                | .907 | .250 | .906       | .583                  | .000 | .625 | .600       | .500                | .901 | .815 | .905       | .571                    | .000 | .750 | .583       | .925       |

# Peggy Malone & Associates

## (888) 247-8602

**NOTE: Had to reset to record  
4-14.**

File Name : 9\_US 29 & Lewis and Clark Dr AM  
Site Code :  
Start Date : 4/14/2021  
Page No : 1

### Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Lewis and Clark Dr Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|------------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                        | Left | Peds | App. Total |            |
| 07:00 AM    | 22               | 415  | 0    | 0    | 437        | 149              | 13   | 0    | 162        | 4                            | 2    | 0    | 6          | 605        |
| 07:15 AM    | 28               | 461  | 1    | 0    | 490        | 194              | 8    | 0    | 202        | 1                            | 2    | 0    | 3          | 695        |
| 07:30 AM    | 43               | 495  | 0    | 0    | 538        | 180              | 8    | 0    | 188        | 2                            | 8    | 0    | 10         | 736        |
| 07:45 AM    | 41               | 398  | 0    | 0    | 439        | 220              | 22   | 0    | 242        | 2                            | 6    | 0    | 8          | 689        |
| Total       | 134              | 1769 | 1    | 0    | 1904       | 743              | 51   | 0    | 794        | 9                            | 18   | 0    | 27         | 2725       |
| 08:00 AM    | 35               | 361  | 0    | 0    | 396        | 229              | 14   | 0    | 243        | 1                            | 4    | 0    | 5          | 644        |
| 08:15 AM    | 25               | 396  | 0    | 0    | 421        | 235              | 7    | 0    | 242        | 2                            | 14   | 0    | 16         | 679        |
| 08:30 AM    | 21               | 353  | 0    | 0    | 374        | 211              | 9    | 0    | 220        | 2                            | 4    | 0    | 6          | 600        |
| 08:45 AM    | 16               | 337  | 0    | 0    | 353        | 211              | 10   | 0    | 221        | 0                            | 4    | 0    | 4          | 578        |
| Total       | 97               | 1447 | 0    | 0    | 1544       | 886              | 40   | 0    | 926        | 5                            | 26   | 0    | 31         | 2501       |
| Grand Total | 231              | 3216 | 1    | 0    | 3448       | 1629             | 91   | 0    | 1720       | 14                           | 44   | 0    | 58         | 5226       |
| Apprch %    | 6.7              | 93.3 | 0    | 0    |            | 94.7             | 5.3  | 0    |            | 24.1                         | 75.9 | 0    |            |            |
| Total %     | 4.4              | 61.5 | 0    | 0    | 66         | 31.2             | 1.7  | 0    | 32.9       | 0.3                          | 0.8  | 0    | 1.1        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Lewis and Clark Dr<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|---------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                           | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                                 |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                     |      |            |                                 |      |            |            |
| 07:15 AM                                                   | 28                  | 461  | 1    | 490        | 194                 | 8    | 202        | 1                               | 2    | 3          | 695        |
| 07:30 AM                                                   | 43                  | 495  | 0    | 538        | 180                 | 8    | 188        | 2                               | 8    | 10         | 736        |
| 07:45 AM                                                   | 41                  | 398  | 0    | 439        | 220                 | 22   | 242        | 2                               | 6    | 8          | 689        |
| 08:00 AM                                                   | 35                  | 361  | 0    | 396        | 229                 | 14   | 243        | 1                               | 4    | 5          | 644        |
| Total Volume                                               | 147                 | 1715 | 1    | 1863       | 823                 | 52   | 875        | 6                               | 20   | 26         | 2764       |
| % App. Total                                               | 7.9                 | 92.1 | 0.1  |            | 94.1                | 5.9  |            | 23.1                            | 76.9 |            |            |
| PHF                                                        | .855                | .866 | .250 | .866       | .898                | .591 | .900       | .750                            | .625 | .650       | .939       |

Peggy Malone & Associates  
(888) 247-8602

File Name : 9\_US 29 & Lewis and Clark Dr AM  
Site Code :  
Start Date : 4/14/2021  
Page No : 1

Groups Printed- Trucks

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Lewis and Clark Dr Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|------------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                        | Left | Peds | App. Total |            |
| 07:00 AM    | 1                | 12   | 0    | 0    | 13         | 19               | 0    | 0    | 19         | 0                            | 2    | 0    | 2          | 34         |
| 07:15 AM    | 0                | 17   | 0    | 0    | 17         | 23               | 0    | 0    | 23         | 0                            | 0    | 0    | 0          | 40         |
| 07:30 AM    | 1                | 16   | 0    | 0    | 17         | 9                | 0    | 0    | 9          | 0                            | 0    | 0    | 0          | 26         |
| 07:45 AM    | 0                | 24   | 0    | 0    | 24         | 18               | 0    | 0    | 18         | 0                            | 0    | 0    | 0          | 42         |
| Total       | 2                | 69   | 0    | 0    | 71         | 69               | 0    | 0    | 69         | 0                            | 2    | 0    | 2          | 142        |
| 08:00 AM    | 0                | 17   | 0    | 0    | 17         | 18               | 1    | 0    | 19         | 1                            | 0    | 0    | 1          | 37         |
| 08:15 AM    | 0                | 13   | 0    | 0    | 13         | 14               | 0    | 0    | 14         | 0                            | 1    | 0    | 1          | 28         |
| 08:30 AM    | 0                | 11   | 0    | 0    | 11         | 26               | 1    | 0    | 27         | 0                            | 1    | 0    | 1          | 39         |
| 08:45 AM    | 0                | 20   | 0    | 0    | 20         | 9                | 1    | 0    | 10         | 0                            | 2    | 0    | 2          | 32         |
| Total       | 0                | 61   | 0    | 0    | 61         | 67               | 3    | 0    | 70         | 1                            | 4    | 0    | 5          | 136        |
| Grand Total | 2                | 130  | 0    | 0    | 132        | 136              | 3    | 0    | 139        | 1                            | 6    | 0    | 7          | 278        |
| Apprch %    | 1.5              | 98.5 | 0    | 0    |            | 97.8             | 2.2  | 0    |            | 14.3                         | 85.7 | 0    |            |            |
| Total %     | 0.7              | 46.8 | 0    | 0    | 47.5       | 48.9             | 1.1  | 0    | 50         | 0.4                          | 2.2  | 0    | 2.5        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Lewis and Clark Dr<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|---------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                           | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                                 |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM       |                     |      |      |            |                     |      |            |                                 |      |            |            |
| 07:45 AM                                                   | 0                   | 24   | 0    | 24         | 18                  | 0    | 18         | 0                               | 0    | 0          | 42         |
| 08:00 AM                                                   | 0                   | 17   | 0    | 17         | 18                  | 1    | 19         | 1                               | 0    | 1          | 37         |
| 08:15 AM                                                   | 0                   | 13   | 0    | 13         | 14                  | 0    | 14         | 0                               | 1    | 1          | 28         |
| 08:30 AM                                                   | 0                   | 11   | 0    | 11         | 26                  | 1    | 27         | 0                               | 1    | 1          | 39         |
| Total Volume                                               | 0                   | 65   | 0    | 65         | 76                  | 2    | 78         | 1                               | 2    | 3          | 146        |
| % App. Total                                               | 0                   | 100  | 0    |            | 97.4                | 2.6  |            | 33.3                            | 66.7 |            |            |
| PHF                                                        | .000                | .677 | .000 | .677       | .731                | .500 | .722       | .250                            | .500 | .750       | .869       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 9\_US 29 & Lewis and Clark Dr AM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Lewis and Clark Dr Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|------------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                        | Left | Peds | App. Total |            |
| 07:00 AM    | 23               | 427  | 0    | 0    | 450        | 168              | 13   | 0    | 181        | 4                            | 4    | 0    | 8          | 639        |
| 07:15 AM    | 28               | 478  | 1    | 0    | 507        | 217              | 8    | 0    | 225        | 1                            | 2    | 0    | 3          | 735        |
| 07:30 AM    | 44               | 511  | 0    | 0    | 555        | 189              | 8    | 0    | 197        | 2                            | 8    | 0    | 10         | 762        |
| 07:45 AM    | 41               | 422  | 0    | 0    | 463        | 238              | 22   | 0    | 260        | 2                            | 6    | 0    | 8          | 731        |
| Total       | 136              | 1838 | 1    | 0    | 1975       | 812              | 51   | 0    | 863        | 9                            | 20   | 0    | 29         | 2867       |
| 08:00 AM    | 35               | 378  | 0    | 0    | 413        | 247              | 15   | 0    | 262        | 2                            | 4    | 0    | 6          | 681        |
| 08:15 AM    | 25               | 409  | 0    | 0    | 434        | 249              | 7    | 0    | 256        | 2                            | 15   | 0    | 17         | 707        |
| 08:30 AM    | 21               | 364  | 0    | 0    | 385        | 237              | 10   | 0    | 247        | 2                            | 5    | 0    | 7          | 639        |
| 08:45 AM    | 16               | 357  | 0    | 0    | 373        | 220              | 11   | 0    | 231        | 0                            | 6    | 0    | 6          | 610        |
| Total       | 97               | 1508 | 0    | 0    | 1605       | 953              | 43   | 0    | 996        | 6                            | 30   | 0    | 36         | 2637       |
| Grand Total | 233              | 3346 | 1    | 0    | 3580       | 1765             | 94   | 0    | 1859       | 15                           | 50   | 0    | 65         | 5504       |
| Apprch %    | 6.5              | 93.5 | 0    | 0    |            | 94.9             | 5.1  | 0    |            | 23.1                         | 76.9 | 0    |            |            |
| Total %     | 4.2              | 60.8 | 0    | 0    | 65         | 32.1             | 1.7  | 0    | 33.8       | 0.3                          | 0.9  | 0    | 1.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Lewis and Clark Dr<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|---------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                           | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                                 |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                     |      |            |                                 |      |            |            |
| 07:15 AM                                                   | 28                  | 478  | 1    | 507        | 217                 | 8    | 225        | 1                               | 2    | 3          | 735        |
| 07:30 AM                                                   | 44                  | 511  | 0    | 555        | 189                 | 8    | 197        | 2                               | 8    | 10         | 762        |
| 07:45 AM                                                   | 41                  | 422  | 0    | 463        | 238                 | 22   | 260        | 2                               | 6    | 8          | 731        |
| 08:00 AM                                                   | 35                  | 378  | 0    | 413        | 247                 | 15   | 262        | 2                               | 4    | 6          | 681        |
| Total Volume                                               | 148                 | 1789 | 1    | 1938       | 891                 | 53   | 944        | 7                               | 20   | 27         | 2909       |
| % App. Total                                               | 7.6                 | 92.3 | 0.1  |            | 94.4                | 5.6  |            | 25.9                            | 74.1 |            |            |
| PHF                                                        | .841                | .875 | .250 | .873       | .902                | .602 | .901       | .875                            | .625 | .675       | .954       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 9\_US 29 & Lewis and Clark Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | US 29<br>Northbound |      |      |            | Lewis and Clark Dr<br>Eastbound |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------|------|------|------------|---------------------------------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Thru                | Left | Peds | App. Total | Right                           | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 6                   | 305  | 0    | 0    | 311        | 386                 | 0    | 0    | 386        | 15                              | 35   | 0    | 50         | 747        |
| 04:15 PM    | 2                   | 283  | 1    | 0    | 286        | 411                 | 2    | 0    | 413        | 6                               | 19   | 0    | 25         | 724        |
| 04:30 PM    | 13                  | 268  | 0    | 0    | 281        | 412                 | 5    | 0    | 417        | 14                              | 56   | 0    | 70         | 768        |
| 04:45 PM    | 11                  | 321  | 1    | 0    | 333        | 475                 | 3    | 0    | 478        | 7                               | 20   | 0    | 27         | 838        |
| Total       | 32                  | 1177 | 2    | 0    | 1211       | 1684                | 10   | 0    | 1694       | 42                              | 130  | 0    | 172        | 3077       |
| 05:00 PM    | 6                   | 259  | 0    | 0    | 265        | 475                 | 1    | 0    | 476        | 17                              | 41   | 0    | 58         | 799        |
| 05:15 PM    | 6                   | 280  | 0    | 0    | 286        | 488                 | 1    | 0    | 489        | 3                               | 32   | 0    | 35         | 810        |
| 05:30 PM    | 8                   | 219  | 1    | 0    | 228        | 450                 | 1    | 0    | 451        | 5                               | 19   | 0    | 24         | 703        |
| 05:45 PM    | 5                   | 280  | 1    | 0    | 286        | 414                 | 1    | 0    | 415        | 8                               | 13   | 0    | 21         | 722        |
| Total       | 25                  | 1038 | 2    | 0    | 1065       | 1827                | 4    | 0    | 1831       | 33                              | 105  | 0    | 138        | 3034       |
| Grand Total | 57                  | 2215 | 4    | 0    | 2276       | 3511                | 14   | 0    | 3525       | 75                              | 235  | 0    | 310        | 6111       |
| Apprch %    | 2.5                 | 97.3 | 0.2  | 0    |            | 99.6                | 0.4  | 0    |            | 24.2                            | 75.8 | 0    |            |            |
| Total %     | 0.9                 | 36.2 | 0.1  | 0    | 37.2       | 57.5                | 0.2  | 0    | 57.7       | 1.2                             | 3.8  | 0    | 5.1        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Lewis and Clark Dr<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|---------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                           | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                                 |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                     |      |            |                                 |      |            |            |
| 04:30 PM                                                   | 13                  | 268  | 0    | 281        | 412                 | 5    | 417        | 14                              | 56   | 70         | 768        |
| 04:45 PM                                                   | 11                  | 321  | 1    | 333        | 475                 | 3    | 478        | 7                               | 20   | 27         | 838        |
| 05:00 PM                                                   | 6                   | 259  | 0    | 265        | 475                 | 1    | 476        | 17                              | 41   | 58         | 799        |
| 05:15 PM                                                   | 6                   | 280  | 0    | 286        | 488                 | 1    | 489        | 3                               | 32   | 35         | 810        |
| Total Volume                                               | 36                  | 1128 | 1    | 1165       | 1850                | 10   | 1860       | 41                              | 149  | 190        | 3215       |
| % App. Total                                               | 3.1                 | 96.8 | 0.1  |            | 99.5                | 0.5  |            | 21.6                            | 78.4 |            |            |
| PHF                                                        | .692                | .879 | .250 | .875       | .948                | .500 | .951       | .603                            | .665 | .679       | .959       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 9\_US 29 & Lewis and Clark Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | US 29<br>Northbound |      |      |            | Lewis and Clark Dr<br>Eastbound |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------|------|------|------------|---------------------------------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Thru                | Left | Peds | App. Total | Right                           | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 1                   | 15   | 0    | 0    | 16         | 10                  | 2    | 0    | 12         | 2                               | 0    | 0    | 2          | 30         |
| 04:15 PM    | 0                   | 14   | 0    | 0    | 14         | 11                  | 0    | 0    | 11         | 0                               | 0    | 0    | 0          | 25         |
| 04:30 PM    | 0                   | 9    | 0    | 0    | 9          | 19                  | 4    | 0    | 23         | 0                               | 0    | 0    | 0          | 32         |
| 04:45 PM    | 0                   | 13   | 0    | 0    | 13         | 10                  | 1    | 0    | 11         | 1                               | 0    | 0    | 1          | 25         |
| Total       | 1                   | 51   | 0    | 0    | 52         | 50                  | 7    | 0    | 57         | 3                               | 0    | 0    | 3          | 112        |
| 05:00 PM    | 0                   | 5    | 0    | 0    | 5          | 8                   | 1    | 0    | 9          | 2                               | 0    | 0    | 2          | 16         |
| 05:15 PM    | 1                   | 6    | 0    | 0    | 7          | 9                   | 1    | 0    | 10         | 3                               | 0    | 0    | 3          | 20         |
| 05:30 PM    | 2                   | 2    | 0    | 0    | 4          | 7                   | 1    | 0    | 8          | 0                               | 0    | 0    | 0          | 12         |
| 05:45 PM    | 0                   | 7    | 0    | 0    | 7          | 7                   | 0    | 0    | 7          | 1                               | 0    | 0    | 1          | 15         |
| Total       | 3                   | 20   | 0    | 0    | 23         | 31                  | 3    | 0    | 34         | 6                               | 0    | 0    | 6          | 63         |
| Grand Total | 4                   | 71   | 0    | 0    | 75         | 81                  | 10   | 0    | 91         | 9                               | 0    | 0    | 9          | 175        |
| Apprch %    | 5.3                 | 94.7 | 0    | 0    |            | 89                  | 11   | 0    |            | 100                             | 0    | 0    |            |            |
| Total %     | 2.3                 | 40.6 | 0    | 0    | 42.9       | 46.3                | 5.7  | 0    | 52         | 5.1                             | 0    | 0    | 5.1        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Lewis and Clark Dr<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|---------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                           | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                                 |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                     |      |            |                                 |      |            |            |
| 04:00 PM                                                   | 1                   | 15   | 0    | 16         | 10                  | 2    | 12         | 2                               | 0    | 2          | 30         |
| 04:15 PM                                                   | 0                   | 14   | 0    | 14         | 11                  | 0    | 11         | 0                               | 0    | 0          | 25         |
| 04:30 PM                                                   | 0                   | 9    | 0    | 9          | 19                  | 4    | 23         | 0                               | 0    | 0          | 32         |
| 04:45 PM                                                   | 0                   | 13   | 0    | 13         | 10                  | 1    | 11         | 1                               | 0    | 1          | 25         |
| Total Volume                                               | 1                   | 51   | 0    | 52         | 50                  | 7    | 57         | 3                               | 0    | 3          | 112        |
| % App. Total                                               | 1.9                 | 98.1 | 0    |            | 87.7                | 12.3 |            | 100                             | 0    |            |            |
| PHF                                                        | .250                | .850 | .000 | .813       | .658                | .438 | .620       | .375                            | .000 | .375       | .875       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 9\_US 29 & Lewis and Clark Dr PM  
 Site Code :  
 Start Date : 4/14/2021  
 Page No : 1

### Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Lewis and Clark Dr Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|------------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                        | Left | Peds | App. Total |            |
| 04:00 PM    | 7                | 320  | 0    | 0    | 327        | 396              | 2    | 0    | 398        | 17                           | 35   | 0    | 52         | 777        |
| 04:15 PM    | 2                | 297  | 1    | 0    | 300        | 422              | 2    | 0    | 424        | 6                            | 19   | 0    | 25         | 749        |
| 04:30 PM    | 13               | 277  | 0    | 0    | 290        | 431              | 9    | 0    | 440        | 14                           | 56   | 0    | 70         | 800        |
| 04:45 PM    | 11               | 334  | 1    | 0    | 346        | 485              | 4    | 0    | 489        | 8                            | 20   | 0    | 28         | 863        |
| Total       | 33               | 1228 | 2    | 0    | 1263       | 1734             | 17   | 0    | 1751       | 45                           | 130  | 0    | 175        | 3189       |
| 05:00 PM    | 6                | 264  | 0    | 0    | 270        | 483              | 2    | 0    | 485        | 19                           | 41   | 0    | 60         | 815        |
| 05:15 PM    | 7                | 286  | 0    | 0    | 293        | 497              | 2    | 0    | 499        | 6                            | 32   | 0    | 38         | 830        |
| 05:30 PM    | 10               | 221  | 1    | 0    | 232        | 457              | 2    | 0    | 459        | 5                            | 19   | 0    | 24         | 715        |
| 05:45 PM    | 5                | 287  | 1    | 0    | 293        | 421              | 1    | 0    | 422        | 9                            | 13   | 0    | 22         | 737        |
| Total       | 28               | 1058 | 2    | 0    | 1088       | 1858             | 7    | 0    | 1865       | 39                           | 105  | 0    | 144        | 3097       |
| Grand Total | 61               | 2286 | 4    | 0    | 2351       | 3592             | 24   | 0    | 3616       | 84                           | 235  | 0    | 319        | 6286       |
| Apprch %    | 2.6              | 97.2 | 0.2  | 0    |            | 99.3             | 0.7  | 0    |            | 26.3                         | 73.7 | 0    |            |            |
| Total %     | 1                | 36.4 | 0.1  | 0    | 37.4       | 57.1             | 0.4  | 0    | 57.5       | 1.3                          | 3.7  | 0    | 5.1        |            |

|                                                            | US 29 Southbound |      |      |            | US 29 Northbound |      |            | Lewis and Clark Dr Eastbound |      |            |            |
|------------------------------------------------------------|------------------|------|------|------------|------------------|------|------------|------------------------------|------|------------|------------|
| Start Time                                                 | Right            | Thru | Left | App. Total | Thru             | Left | App. Total | Right                        | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                  |      |      |            |                  |      |            |                              |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                  |      |      |            |                  |      |            |                              |      |            |            |
| 04:30 PM                                                   | 13               | 277  | 0    | 290        | 431              | 9    | 440        | 14                           | 56   | 70         | 800        |
| 04:45 PM                                                   | 11               | 334  | 1    | 346        | 485              | 4    | 489        | 8                            | 20   | 28         | 863        |
| 05:00 PM                                                   | 6                | 264  | 0    | 270        | 483              | 2    | 485        | 19                           | 41   | 60         | 815        |
| 05:15 PM                                                   | 7                | 286  | 0    | 293        | 497              | 2    | 499        | 6                            | 32   | 38         | 830        |
| Total Volume                                               | 37               | 1161 | 1    | 1199       | 1896             | 17   | 1913       | 47                           | 149  | 196        | 3308       |
| % App. Total                                               | 3.1              | 96.8 | 0.1  |            | 99.1             | 0.9  |            | 24                           | 76   |            |            |
| PHF                                                        | .712             | .869 | .250 | .866       | .954             | .472 | .958       | .618                         | .665 | .700       | .958       |

**Peggy Malone & Associates**  
904-992-8072

File Name : 14\_US 29 Median Cut North of Cyress Dr AM  
Site Code :  
Start Date : 4/20/2021  
Page No : 1

**Groups Printed- Cars**

| Start Time  | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |      |            | Int. Total |
|-------------|---------------------|------|------|------------|---------------------|------|------|------------|------------|
|             | Thru                | Left | Peds | App. Total | Thru                | Left | Peds | App. Total |            |
| 07:00 AM    | 411                 | 0    | 0    | 411        | 164                 | 4    | 0    | 168        | 579        |
| 07:15 AM    | 471                 | 0    | 0    | 471        | 198                 | 3    | 0    | 201        | 672        |
| 07:30 AM    | 530                 | 0    | 0    | 530        | 181                 | 2    | 0    | 183        | 713        |
| 07:45 AM    | 481                 | 0    | 0    | 481        | 243                 | 5    | 0    | 248        | 729        |
| Total       | 1893                | 0    | 0    | 1893       | 786                 | 14   | 0    | 800        | 2693       |
| 08:00 AM    | 393                 | 0    | 0    | 393        | 242                 | 5    | 0    | 247        | 640        |
| 08:15 AM    | 383                 | 0    | 0    | 383        | 218                 | 1    | 0    | 219        | 602        |
| 08:30 AM    | 328                 | 0    | 0    | 328        | 205                 | 4    | 0    | 209        | 537        |
| 08:45 AM    | 333                 | 0    | 0    | 333        | 217                 | 1    | 0    | 218        | 551        |
| Total       | 1437                | 0    | 0    | 1437       | 882                 | 11   | 0    | 893        | 2330       |
| Grand Total | 3330                | 0    | 0    | 3330       | 1668                | 25   | 0    | 1693       | 5023       |
| Apprch %    | 100                 | 0    | 0    |            | 98.5                | 1.5  | 0    |            |            |
| Total %     | 66.3                | 0    | 0    | 66.3       | 33.2                | 0.5  | 0    | 33.7       |            |

**Peggy Malone & Associates**  
904-992-8072

File Name : 14\_US 29 Median Cut North of Cyress Dr AM  
Site Code :  
Start Date : 4/20/2021  
Page No : 1

**Groups Printed- Trucks**

| Start Time  | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |      |            | Int. Total |
|-------------|---------------------|------|------|------------|---------------------|------|------|------------|------------|
|             | Thru                | Left | Peds | App. Total | Thru                | Left | Peds | App. Total |            |
| 07:00 AM    | 10                  | 0    | 0    | 10         | 17                  | 0    | 0    | 17         | 27         |
| 07:15 AM    | 36                  | 0    | 0    | 36         | 11                  | 0    | 0    | 11         | 47         |
| 07:30 AM    | 26                  | 0    | 0    | 26         | 14                  | 0    | 0    | 14         | 40         |
| 07:45 AM    | 17                  | 0    | 0    | 17         | 20                  | 0    | 0    | 20         | 37         |
| Total       | 89                  | 0    | 0    | 89         | 62                  | 0    | 0    | 62         | 151        |
| 08:00 AM    | 22                  | 0    | 0    | 22         | 13                  | 0    | 0    | 13         | 35         |
| 08:15 AM    | 29                  | 0    | 0    | 29         | 26                  | 1    | 0    | 27         | 56         |
| 08:30 AM    | 23                  | 0    | 0    | 23         | 13                  | 0    | 0    | 13         | 36         |
| 08:45 AM    | 24                  | 0    | 0    | 24         | 22                  | 0    | 0    | 22         | 46         |
| Total       | 98                  | 0    | 0    | 98         | 74                  | 1    | 0    | 75         | 173        |
| Grand Total | 187                 | 0    | 0    | 187        | 136                 | 1    | 0    | 137        | 324        |
| Apprch %    | 100                 | 0    | 0    |            | 99.3                | 0.7  | 0    |            |            |
| Total %     | 57.7                | 0    | 0    | 57.7       | 42                  | 0.3  | 0    | 42.3       |            |

**Peggy Malone & Associates**  
904-992-8072

File Name : 14\_US 29 Median Cut North of Cyress Dr AM  
Site Code :  
Start Date : 4/20/2021  
Page No : 1

**Groups Printed- Combined**

| Start Time  | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |      |            | Int. Total |
|-------------|---------------------|------|------|------------|---------------------|------|------|------------|------------|
|             | Thru                | Left | Peds | App. Total | Thru                | Left | Peds | App. Total |            |
| 07:00 AM    | 421                 | 0    | 0    | 421        | 181                 | 4    | 0    | 185        | 606        |
| 07:15 AM    | 507                 | 0    | 0    | 507        | 209                 | 3    | 0    | 212        | 719        |
| 07:30 AM    | 556                 | 0    | 0    | 556        | 195                 | 2    | 0    | 197        | 753        |
| 07:45 AM    | 498                 | 0    | 0    | 498        | 263                 | 5    | 0    | 268        | 766        |
| Total       | 1982                | 0    | 0    | 1982       | 848                 | 14   | 0    | 862        | 2844       |
| 08:00 AM    | 415                 | 0    | 0    | 415        | 255                 | 5    | 0    | 260        | 675        |
| 08:15 AM    | 412                 | 0    | 0    | 412        | 244                 | 2    | 0    | 246        | 658        |
| 08:30 AM    | 351                 | 0    | 0    | 351        | 218                 | 4    | 0    | 222        | 573        |
| 08:45 AM    | 357                 | 0    | 0    | 357        | 239                 | 1    | 0    | 240        | 597        |
| Total       | 1535                | 0    | 0    | 1535       | 956                 | 12   | 0    | 968        | 2503       |
| Grand Total | 3517                | 0    | 0    | 3517       | 1804                | 26   | 0    | 1830       | 5347       |
| Apprch %    | 100                 | 0    | 0    |            | 98.6                | 1.4  | 0    |            |            |
| Total %     | 65.8                | 0    | 0    | 65.8       | 33.7                | 0.5  | 0    | 34.2       |            |

**Peggy Malone & Associates**  
904-992-8072

File Name : 14\_US 29 Median Cut North of Cyress Dr PM  
Site Code :  
Start Date : 4/20/2021  
Page No : 1

**Groups Printed- Cars**

|             | <b>US 29<br/>Southbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |      |      |            |            |
|-------------|-----------------------------|------|------|------------|-----------------------------|------|------|------------|------------|
| Start Time  | Thru                        | Left | Peds | App. Total | Thru                        | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 327                         | 0    | 0    | 327        | 339                         | 2    | 0    | 341        | 668        |
| 04:15 PM    | 326                         | 0    | 0    | 326        | 417                         | 3    | 0    | 420        | 746        |
| 04:30 PM    | 364                         | 0    | 0    | 364        | 453                         | 5    | 0    | 458        | 822        |
| 04:45 PM    | 309                         | 0    | 0    | 309        | 479                         | 6    | 0    | 485        | 794        |
| Total       | 1326                        | 0    | 0    | 1326       | 1688                        | 16   | 0    | 1704       | 3030       |
| 05:00 PM    | 256                         | 1    | 0    | 257        | 458                         | 1    | 0    | 459        | 716        |
| 05:15 PM    | 311                         | 0    | 0    | 311        | 486                         | 4    | 0    | 490        | 801        |
| 05:30 PM    | 303                         | 0    | 0    | 303        | 507                         | 12   | 0    | 519        | 822        |
| 05:45 PM    | 245                         | 0    | 0    | 245        | 446                         | 7    | 0    | 453        | 698        |
| Total       | 1115                        | 1    | 0    | 1116       | 1897                        | 24   | 0    | 1921       | 3037       |
| Grand Total | 2441                        | 1    | 0    | 2442       | 3585                        | 40   | 0    | 3625       | 6067       |
| Apprch %    | 100                         | 0    | 0    |            | 98.9                        | 1.1  | 0    |            |            |
| Total %     | 40.2                        | 0    | 0    | 40.3       | 59.1                        | 0.7  | 0    | 59.7       |            |

|                                                            | <b>US 29<br/>Southbound</b> |          |            | <b>US 29<br/>Northbound</b> |          |            |            |
|------------------------------------------------------------|-----------------------------|----------|------------|-----------------------------|----------|------------|------------|
| Start Time                                                 | Thru                        | Left     | App. Total | Thru                        | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                             |          |            |                             |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                             |          |            |                             |          |            |            |
| 04:30 PM                                                   | <b>364</b>                  | 0        | <b>364</b> | 453                         | 5        | 458        | <b>822</b> |
| 04:45 PM                                                   | 309                         | 0        | 309        | 479                         | <b>6</b> | 485        | 794        |
| 05:00 PM                                                   | 256                         | <b>1</b> | 257        | 458                         | 1        | 459        | 716        |
| 05:15 PM                                                   | 311                         | 0        | 311        | <b>486</b>                  | 4        | <b>490</b> | 801        |
| Total Volume                                               | 1240                        | 1        | 1241       | 1876                        | 16       | 1892       | 3133       |
| % App. Total                                               | 99.9                        | 0.1      |            | 99.2                        | 0.8      |            |            |
| PHF                                                        | .852                        | .250     | .852       | .965                        | .667     | .965       | .953       |

**Peggy Malone & Associates**  
904-992-8072

File Name : 14\_US 29 Median Cut North of Cyress Dr PM  
Site Code :  
Start Date : 4/20/2021  
Page No : 1

**Groups Printed- Trucks**

|             | <b>US 29<br/>Southbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |      |      |            |            |
|-------------|-----------------------------|------|------|------------|-----------------------------|------|------|------------|------------|
| Start Time  | Thru                        | Left | Peds | App. Total | Thru                        | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 11                          | 0    | 0    | 11         | 12                          | 2    | 0    | 14         | 25         |
| 04:15 PM    | 14                          | 0    | 0    | 14         | 19                          | 1    | 0    | 20         | 34         |
| 04:30 PM    | 17                          | 0    | 0    | 17         | 29                          | 1    | 0    | 30         | 47         |
| 04:45 PM    | 10                          | 0    | 0    | 10         | 8                           | 0    | 0    | 8          | 18         |
| Total       | 52                          | 0    | 0    | 52         | 68                          | 4    | 0    | 72         | 124        |
| 05:00 PM    | 10                          | 0    | 0    | 10         | 11                          | 0    | 0    | 11         | 21         |
| 05:15 PM    | 8                           | 0    | 0    | 8          | 10                          | 0    | 0    | 10         | 18         |
| 05:30 PM    | 11                          | 0    | 0    | 11         | 9                           | 1    | 0    | 10         | 21         |
| 05:45 PM    | 17                          | 0    | 0    | 17         | 7                           | 0    | 0    | 7          | 24         |
| Total       | 46                          | 0    | 0    | 46         | 37                          | 1    | 0    | 38         | 84         |
| Grand Total | 98                          | 0    | 0    | 98         | 105                         | 5    | 0    | 110        | 208        |
| Apprch %    | 100                         | 0    | 0    |            | 95.5                        | 4.5  | 0    |            |            |
| Total %     | 47.1                        | 0    | 0    | 47.1       | 50.5                        | 2.4  | 0    | 52.9       |            |

|                                                            | <b>US 29<br/>Southbound</b> |      |            | <b>US 29<br/>Northbound</b> |      |            |            |
|------------------------------------------------------------|-----------------------------|------|------------|-----------------------------|------|------------|------------|
| Start Time                                                 | Thru                        | Left | App. Total | Thru                        | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                             |      |            |                             |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                             |      |            |                             |      |            |            |
| 04:00 PM                                                   | 11                          | 0    | 11         | 12                          | 2    | 14         | 25         |
| 04:15 PM                                                   | 14                          | 0    | 14         | 19                          | 1    | 20         | 34         |
| 04:30 PM                                                   | 17                          | 0    | 17         | 29                          | 1    | 30         | 47         |
| 04:45 PM                                                   | 10                          | 0    | 10         | 8                           | 0    | 8          | 18         |
| Total Volume                                               | 52                          | 0    | 52         | 68                          | 4    | 72         | 124        |
| % App. Total                                               | 100                         | 0    |            | 94.4                        | 5.6  |            |            |
| PHF                                                        | .765                        | .000 | .765       | .586                        | .500 | .600       | .660       |

**Peggy Malone & Associates**  
904-992-8072

File Name : 14\_US 29 Median Cut North of Cyress Dr PM  
Site Code :  
Start Date : 4/20/2021  
Page No : 1

**Groups Printed- Combined**

|             | <b>US 29<br/>Southbound</b> |      |      |            | <b>US 29<br/>Northbound</b> |      |      |            |            |
|-------------|-----------------------------|------|------|------------|-----------------------------|------|------|------------|------------|
| Start Time  | Thru                        | Left | Peds | App. Total | Thru                        | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 338                         | 0    | 0    | 338        | 351                         | 4    | 0    | 355        | 693        |
| 04:15 PM    | 340                         | 0    | 0    | 340        | 436                         | 4    | 0    | 440        | 780        |
| 04:30 PM    | 381                         | 0    | 0    | 381        | 482                         | 6    | 0    | 488        | 869        |
| 04:45 PM    | 319                         | 0    | 0    | 319        | 487                         | 6    | 0    | 493        | 812        |
| Total       | 1378                        | 0    | 0    | 1378       | 1756                        | 20   | 0    | 1776       | 3154       |
| 05:00 PM    | 266                         | 1    | 0    | 267        | 469                         | 1    | 0    | 470        | 737        |
| 05:15 PM    | 319                         | 0    | 0    | 319        | 496                         | 4    | 0    | 500        | 819        |
| 05:30 PM    | 314                         | 0    | 0    | 314        | 516                         | 13   | 0    | 529        | 843        |
| 05:45 PM    | 262                         | 0    | 0    | 262        | 453                         | 7    | 0    | 460        | 722        |
| Total       | 1161                        | 1    | 0    | 1162       | 1934                        | 25   | 0    | 1959       | 3121       |
| Grand Total | 2539                        | 1    | 0    | 2540       | 3690                        | 45   | 0    | 3735       | 6275       |
| Apprch %    | 100                         | 0    | 0    |            | 98.8                        | 1.2  | 0    |            |            |
| Total %     | 40.5                        | 0    | 0    | 40.5       | 58.8                        | 0.7  | 0    | 59.5       |            |

|                                                            | <b>US 29<br/>Southbound</b> |          |            | <b>US 29<br/>Northbound</b> |          |            |            |
|------------------------------------------------------------|-----------------------------|----------|------------|-----------------------------|----------|------------|------------|
| Start Time                                                 | Thru                        | Left     | App. Total | Thru                        | Left     | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                             |          |            |                             |          |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                             |          |            |                             |          |            |            |
| 04:30 PM                                                   | <b>381</b>                  | 0        | <b>381</b> | 482                         | <b>6</b> | 488        | <b>869</b> |
| 04:45 PM                                                   | 319                         | 0        | 319        | 487                         | 6        | 493        | 812        |
| 05:00 PM                                                   | 266                         | <b>1</b> | 267        | 469                         | 1        | 470        | 737        |
| 05:15 PM                                                   | 319                         | 0        | 319        | <b>496</b>                  | 4        | <b>500</b> | 819        |
| Total Volume                                               | 1285                        | 1        | 1286       | 1934                        | 17       | 1951       | 3237       |
| % App. Total                                               | 99.9                        | 0.1      |            | 99.1                        | 0.9      |            |            |
| PHF                                                        | .843                        | .250     | .844       | .975                        | .708     | .976       | .931       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 10\_US 29 & Northside Dr AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Northside Dr<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Northside Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 2                   | 375  | 1    | 0    | 378        | 1                         | 0    | 0    | 0    | 1          | 1                   | 164  | 1    | 0    | 166        | 3                         | 0    | 0    | 0    | 3          | 548        |
| 07:15 AM    | 2                   | 513  | 3    | 0    | 518        | 0                         | 0    | 0    | 0    | 0          | 1                   | 189  | 0    | 0    | 190        | 0                         | 0    | 0    | 0    | 0          | 708        |
| 07:30 AM    | 1                   | 478  | 0    | 0    | 479        | 0                         | 0    | 0    | 0    | 0          | 1                   | 199  | 2    | 0    | 202        | 2                         | 0    | 1    | 0    | 3          | 684        |
| 07:45 AM    | 1                   | 429  | 1    | 0    | 431        | 0                         | 0    | 0    | 0    | 0          | 0                   | 275  | 1    | 0    | 276        | 2                         | 0    | 0    | 0    | 2          | 709        |
| Total       | 6                   | 1795 | 5    | 0    | 1806       | 1                         | 0    | 0    | 0    | 1          | 3                   | 827  | 4    | 0    | 834        | 7                         | 0    | 1    | 0    | 8          | 2649       |
| 08:00 AM    | 2                   | 363  | 0    | 0    | 365        | 0                         | 0    | 0    | 0    | 0          | 1                   | 215  | 1    | 0    | 217        | 2                         | 0    | 0    | 0    | 2          | 584        |
| 08:15 AM    | 1                   | 402  | 1    | 0    | 404        | 0                         | 0    | 0    | 0    | 0          | 0                   | 215  | 1    | 0    | 216        | 2                         | 0    | 0    | 0    | 2          | 622        |
| 08:30 AM    | 1                   | 356  | 1    | 0    | 358        | 1                         | 0    | 0    | 0    | 1          | 1                   | 208  | 2    | 0    | 211        | 6                         | 0    | 0    | 0    | 6          | 576        |
| 08:45 AM    | 2                   | 357  | 0    | 0    | 359        | 0                         | 0    | 0    | 0    | 0          | 0                   | 235  | 1    | 0    | 236        | 2                         | 0    | 0    | 0    | 2          | 597        |
| Total       | 6                   | 1478 | 2    | 0    | 1486       | 1                         | 0    | 0    | 0    | 1          | 2                   | 873  | 5    | 0    | 880        | 12                        | 0    | 0    | 0    | 12         | 2379       |
| Grand Total | 12                  | 3273 | 7    | 0    | 3292       | 2                         | 0    | 0    | 0    | 2          | 5                   | 1700 | 9    | 0    | 1714       | 19                        | 0    | 1    | 0    | 20         | 5028       |
| Apprch %    | 0.4                 | 99.4 | 0.2  | 0    |            | 100                       | 0    | 0    | 0    |            | 0.3                 | 99.2 | 0.5  | 0    |            | 95                        | 0    | 5    | 0    |            |            |
| Total %     | 0.2                 | 65.1 | 0.1  | 0    | 65.5       | 0                         | 0    | 0    | 0    | 0          | 0.1                 | 33.8 | 0.2  | 0    | 34.1       | 0.4                       | 0    | 0    | 0    | 0.4        |            |

|                                                            | US 29<br>Southbound |      |      |            | Northside Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Northside Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:15 AM                                                   | 2                   | 513  | 3    | 518        | 0                         | 0    | 0    | 0          | 1                   | 189  | 0    | 190        | 0                         | 0    | 0    | 0          | 708        |
| 07:30 AM                                                   | 1                   | 478  | 0    | 479        | 0                         | 0    | 0    | 0          | 1                   | 199  | 2    | 202        | 2                         | 0    | 1    | 3          | 684        |
| 07:45 AM                                                   | 1                   | 429  | 1    | 431        | 0                         | 0    | 0    | 0          | 0                   | 275  | 1    | 276        | 2                         | 0    | 0    | 2          | 709        |
| 08:00 AM                                                   | 2                   | 363  | 0    | 365        | 0                         | 0    | 0    | 0          | 1                   | 215  | 1    | 217        | 2                         | 0    | 0    | 2          | 584        |
| Total Volume                                               | 6                   | 1783 | 4    | 1793       | 0                         | 0    | 0    | 0          | 3                   | 878  | 4    | 885        | 6                         | 0    | 1    | 7          | 2685       |
| % App. Total                                               | 0.3                 | 99.4 | 0.2  |            | 0                         | 0    | 0    |            | 0.3                 | 99.2 | 0.5  |            | 85.7                      | 0    | 14.3 |            |            |
| PHF                                                        | .750                | .869 | .333 | .865       | .000                      | .000 | .000 | .000       | .750                | .798 | .500 | .802       | .750                      | .000 | .250 | .583       | .947       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 10\_US 29 & Northside Dr AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Northside Dr<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Northside Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                   | 18   | 0    | 0    | 19         | 0                         | 0    | 0    | 0    | 0          | 1                   | 16   | 1    | 0    | 18         | 3                         | 0    | 0    | 0    | 3          | 40         |
| 07:15 AM    | 1                   | 31   | 4    | 0    | 36         | 0                         | 0    | 0    | 0    | 0          | 0                   | 18   | 0    | 0    | 18         | 0                         | 0    | 0    | 0    | 0          | 54         |
| 07:30 AM    | 0                   | 18   | 1    | 0    | 19         | 1                         | 0    | 0    | 0    | 1          | 0                   | 16   | 0    | 0    | 16         | 1                         | 0    | 0    | 0    | 1          | 37         |
| 07:45 AM    | 2                   | 14   | 2    | 0    | 18         | 0                         | 0    | 0    | 0    | 0          | 0                   | 12   | 0    | 0    | 12         | 1                         | 0    | 0    | 0    | 1          | 31         |
| Total       | 4                   | 81   | 7    | 0    | 92         | 1                         | 0    | 0    | 0    | 1          | 1                   | 62   | 1    | 0    | 64         | 5                         | 0    | 0    | 0    | 5          | 162        |
| 08:00 AM    | 0                   | 16   | 2    | 0    | 18         | 0                         | 0    | 0    | 0    | 0          | 0                   | 13   | 0    | 0    | 13         | 2                         | 0    | 0    | 0    | 2          | 33         |
| 08:15 AM    | 0                   | 17   | 2    | 0    | 19         | 2                         | 0    | 0    | 0    | 2          | 0                   | 20   | 1    | 0    | 21         | 0                         | 0    | 0    | 0    | 0          | 42         |
| 08:30 AM    | 0                   | 23   | 1    | 0    | 24         | 0                         | 0    | 0    | 0    | 0          | 1                   | 19   | 0    | 0    | 20         | 1                         | 0    | 0    | 0    | 1          | 45         |
| 08:45 AM    | 0                   | 13   | 2    | 0    | 15         | 0                         | 0    | 0    | 0    | 0          | 0                   | 22   | 0    | 0    | 22         | 1                         | 0    | 0    | 0    | 1          | 38         |
| Total       | 0                   | 69   | 7    | 0    | 76         | 2                         | 0    | 0    | 0    | 2          | 1                   | 74   | 1    | 0    | 76         | 4                         | 0    | 0    | 0    | 4          | 158        |
| Grand Total | 4                   | 150  | 14   | 0    | 168        | 3                         | 0    | 0    | 0    | 3          | 2                   | 136  | 2    | 0    | 140        | 9                         | 0    | 0    | 0    | 9          | 320        |
| Apprch %    | 2.4                 | 89.3 | 8.3  | 0    |            | 100                       | 0    | 0    | 0    |            | 1.4                 | 97.1 | 1.4  | 0    |            | 100                       | 0    | 0    | 0    |            |            |
| Total %     | 1.2                 | 46.9 | 4.4  | 0    | 52.5       | 0.9                       | 0    | 0    | 0    | 0.9        | 0.6                 | 42.5 | 0.6  | 0    | 43.8       | 2.8                       | 0    | 0    | 0    | 2.8        |            |

|                                                            | US 29<br>Southbound |      |      |            | Northside Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Northside Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:00 AM                                                   | 1                   | 18   | 0    | 19         | 0                         | 0    | 0    | 0          | 1                   | 16   | 1    | 18         | 3                         | 0    | 0    | 3          | 40         |
| 07:15 AM                                                   | 1                   | 31   | 4    | 36         | 0                         | 0    | 0    | 0          | 0                   | 18   | 0    | 18         | 0                         | 0    | 0    | 0          | 54         |
| 07:30 AM                                                   | 0                   | 18   | 1    | 19         | 1                         | 0    | 0    | 1          | 0                   | 16   | 0    | 16         | 1                         | 0    | 0    | 1          | 37         |
| 07:45 AM                                                   | 2                   | 14   | 2    | 18         | 0                         | 0    | 0    | 0          | 0                   | 12   | 0    | 12         | 1                         | 0    | 0    | 1          | 31         |
| Total Volume                                               | 4                   | 81   | 7    | 92         | 1                         | 0    | 0    | 1          | 1                   | 62   | 1    | 64         | 5                         | 0    | 0    | 5          | 162        |
| % App. Total                                               | 4.3                 | 88   | 7.6  |            | 100                       | 0    | 0    |            | 1.6                 | 96.9 | 1.6  |            | 100                       | 0    | 0    |            |            |
| PHF                                                        | .500                | .653 | .438 | .639       | .250                      | .000 | .000 | .250       | .250                | .861 | .250 | .889       | .417                      | .000 | .000 | .417       | .750       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 10\_US 29 & Northside Dr AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Northside Dr<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Northside Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 3                   | 393  | 1    | 0    | 397        | 1                         | 0    | 0    | 0    | 1          | 2                   | 180  | 2    | 0    | 184        | 6                         | 0    | 0    | 0    | 6          | 588        |
| 07:15 AM    | 3                   | 544  | 7    | 0    | 554        | 0                         | 0    | 0    | 0    | 0          | 1                   | 207  | 0    | 0    | 208        | 0                         | 0    | 0    | 0    | 0          | 762        |
| 07:30 AM    | 1                   | 496  | 1    | 0    | 498        | 1                         | 0    | 0    | 0    | 1          | 1                   | 215  | 2    | 0    | 218        | 3                         | 0    | 1    | 0    | 4          | 721        |
| 07:45 AM    | 3                   | 443  | 3    | 0    | 449        | 0                         | 0    | 0    | 0    | 0          | 0                   | 287  | 1    | 0    | 288        | 3                         | 0    | 0    | 0    | 3          | 740        |
| Total       | 10                  | 1876 | 12   | 0    | 1898       | 2                         | 0    | 0    | 0    | 2          | 4                   | 889  | 5    | 0    | 898        | 12                        | 0    | 1    | 0    | 13         | 2811       |
| 08:00 AM    | 2                   | 379  | 2    | 0    | 383        | 0                         | 0    | 0    | 0    | 0          | 1                   | 228  | 1    | 0    | 230        | 4                         | 0    | 0    | 0    | 4          | 617        |
| 08:15 AM    | 1                   | 419  | 3    | 0    | 423        | 2                         | 0    | 0    | 0    | 2          | 0                   | 235  | 2    | 0    | 237        | 2                         | 0    | 0    | 0    | 2          | 664        |
| 08:30 AM    | 1                   | 379  | 2    | 0    | 382        | 1                         | 0    | 0    | 0    | 1          | 2                   | 227  | 2    | 0    | 231        | 7                         | 0    | 0    | 0    | 7          | 621        |
| 08:45 AM    | 2                   | 370  | 2    | 0    | 374        | 0                         | 0    | 0    | 0    | 0          | 0                   | 257  | 1    | 0    | 258        | 3                         | 0    | 0    | 0    | 3          | 635        |
| Total       | 6                   | 1547 | 9    | 0    | 1562       | 3                         | 0    | 0    | 0    | 3          | 3                   | 947  | 6    | 0    | 956        | 16                        | 0    | 0    | 0    | 16         | 2537       |
| Grand Total | 16                  | 3423 | 21   | 0    | 3460       | 5                         | 0    | 0    | 0    | 5          | 7                   | 1836 | 11   | 0    | 1854       | 28                        | 0    | 1    | 0    | 29         | 5348       |
| Apprch %    | 0.5                 | 98.9 | 0.6  | 0    |            | 100                       | 0    | 0    | 0    |            | 0.4                 | 99   | 0.6  | 0    |            | 96.6                      | 0    | 3.4  | 0    |            |            |
| Total %     | 0.3                 | 64   | 0.4  | 0    | 64.7       | 0.1                       | 0    | 0    | 0    | 0.1        | 0.1                 | 34.3 | 0.2  | 0    | 34.7       | 0.5                       | 0    | 0    | 0    | 0.5        |            |

|                                                            | US 29<br>Southbound |      |      |            | Northside Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Northside Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 07:15 AM                                                   | 3                   | 544  | 7    | 554        | 0                         | 0    | 0    | 0          | 1                   | 207  | 0    | 208        | 0                         | 0    | 0    | 0          | 762        |
| 07:30 AM                                                   | 1                   | 496  | 1    | 498        | 1                         | 0    | 0    | 1          | 1                   | 215  | 2    | 218        | 3                         | 0    | 1    | 4          | 721        |
| 07:45 AM                                                   | 3                   | 443  | 3    | 449        | 0                         | 0    | 0    | 0          | 0                   | 287  | 1    | 288        | 3                         | 0    | 0    | 3          | 740        |
| 08:00 AM                                                   | 2                   | 379  | 2    | 383        | 0                         | 0    | 0    | 0          | 1                   | 228  | 1    | 230        | 4                         | 0    | 0    | 4          | 617        |
| Total Volume                                               | 9                   | 1862 | 13   | 1884       | 1                         | 0    | 0    | 1          | 3                   | 937  | 4    | 944        | 10                        | 0    | 1    | 11         | 2840       |
| % App. Total                                               | 0.5                 | 98.8 | 0.7  |            | 100                       | 0    | 0    |            | 0.3                 | 99.3 | 0.4  |            | 90.9                      | 0    | 9.1  |            |            |
| PHF                                                        | .750                | .856 | .464 | .850       | .250                      | .000 | .000 | .250       | .750                | .816 | .500 | .819       | .625                      | .000 | .250 | .688       | .932       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 10\_US 29 & Northside Dr PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Northside Dr<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Northside Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 316  | 2    | 0    | 318        | 1                         | 0    | 0    | 0    | 1          | 0                   | 370  | 1    | 0    | 371        | 0                         | 0    | 0    | 0    | 0          | 690        |
| 04:15 PM    | 1                   | 292  | 4    | 0    | 297        | 0                         | 0    | 0    | 0    | 0          | 0                   | 380  | 2    | 0    | 382        | 4                         | 0    | 0    | 0    | 4          | 683        |
| 04:30 PM    | 0                   | 320  | 6    | 0    | 326        | 2                         | 0    | 0    | 0    | 2          | 2                   | 409  | 1    | 0    | 412        | 1                         | 0    | 0    | 0    | 1          | 741        |
| 04:45 PM    | 1                   | 288  | 3    | 0    | 292        | 1                         | 0    | 0    | 0    | 1          | 0                   | 444  | 1    | 0    | 445        | 5                         | 0    | 0    | 0    | 5          | 743        |
| Total       | 2                   | 1216 | 15   | 0    | 1233       | 4                         | 0    | 0    | 0    | 4          | 2                   | 1603 | 5    | 0    | 1610       | 10                        | 0    | 0    | 0    | 10         | 2857       |
| 05:00 PM    | 0                   | 303  | 7    | 0    | 310        | 0                         | 0    | 0    | 0    | 0          | 0                   | 480  | 1    | 0    | 481        | 6                         | 0    | 0    | 0    | 6          | 797        |
| 05:15 PM    | 0                   | 278  | 1    | 0    | 279        | 3                         | 0    | 0    | 0    | 3          | 0                   | 505  | 2    | 0    | 507        | 5                         | 0    | 0    | 0    | 5          | 794        |
| 05:30 PM    | 0                   | 266  | 2    | 0    | 268        | 9                         | 0    | 0    | 0    | 9          | 0                   | 449  | 1    | 0    | 450        | 1                         | 0    | 0    | 0    | 1          | 728        |
| 05:45 PM    | 0                   | 263  | 2    | 0    | 265        | 3                         | 0    | 0    | 0    | 3          | 0                   | 393  | 0    | 0    | 393        | 1                         | 0    | 0    | 0    | 1          | 662        |
| Total       | 0                   | 1110 | 12   | 0    | 1122       | 15                        | 0    | 0    | 0    | 15         | 0                   | 1827 | 4    | 0    | 1831       | 13                        | 0    | 0    | 0    | 13         | 2981       |
| Grand Total | 2                   | 2326 | 27   | 0    | 2355       | 19                        | 0    | 0    | 0    | 19         | 2                   | 3430 | 9    | 0    | 3441       | 23                        | 0    | 0    | 0    | 23         | 5838       |
| Apprch %    | 0.1                 | 98.8 | 1.1  | 0    |            | 100                       | 0    | 0    | 0    |            | 0.1                 | 99.7 | 0.3  | 0    |            | 100                       | 0    | 0    | 0    |            |            |
| Total %     | 0                   | 39.8 | 0.5  | 0    | 40.3       | 0.3                       | 0    | 0    | 0    | 0.3        | 0                   | 58.8 | 0.2  | 0    | 58.9       | 0.4                       | 0    | 0    | 0    | 0.4        |            |

|                                                            | US 29<br>Southbound |            |          |            | Northside Dr<br>Westbound |      |      |            | US 29<br>Northbound |            |          |            | Northside Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------------|----------|------------|---------------------------|------|------|------------|---------------------|------------|----------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left     | App. Total | Right                     | Thru | Left | App. Total | Right               | Thru       | Left     | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |          |            |                           |      |      |            |                     |            |          |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |          |            |                           |      |      |            |                     |            |          |            |                           |      |      |            |            |
| 04:30 PM                                                   | 0                   | <b>320</b> | 6        | <b>326</b> | 2                         | 0    | 0    | 2          | <b>2</b>            | 409        | 1        | 412        | 1                         | 0    | 0    | 1          | 741        |
| 04:45 PM                                                   | <b>1</b>            | 288        | 3        | 292        | 1                         | 0    | 0    | 1          | 0                   | 444        | 1        | 445        | 5                         | 0    | 0    | 5          | 743        |
| 05:00 PM                                                   | 0                   | 303        | <b>7</b> | 310        | 0                         | 0    | 0    | 0          | 0                   | 480        | 1        | 481        | <b>6</b>                  | 0    | 0    | <b>6</b>   | <b>797</b> |
| 05:15 PM                                                   | 0                   | 278        | 1        | 279        | <b>3</b>                  | 0    | 0    | <b>3</b>   | 0                   | <b>505</b> | <b>2</b> | <b>507</b> | 5                         | 0    | 0    | 5          | 794        |
| Total Volume                                               | 1                   | 1189       | 17       | 1207       | 6                         | 0    | 0    | 6          | 2                   | 1838       | 5        | 1845       | 17                        | 0    | 0    | 17         | 3075       |
| % App. Total                                               | 0.1                 | 98.5       | 1.4      |            | 100                       | 0    | 0    |            | 0.1                 | 99.6       | 0.3      |            | 100                       | 0    | 0    |            |            |
| PHF                                                        | .250                | .929       | .607     | .926       | .500                      | .000 | .000 | .500       | .250                | .910       | .625     | .910       | .708                      | .000 | .000 | .708       | .965       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 10\_US 29 & Northside Dr PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Northside Dr<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Northside Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 15   | 0    | 0    | 15         | 2                         | 0    | 0    | 0    | 2          | 0                   | 12   | 1    | 0    | 13         | 1                         | 0    | 0    | 0    | 1          | 31         |
| 04:15 PM    | 0                   | 12   | 0    | 0    | 12         | 0                         | 0    | 0    | 0    | 0          | 0                   | 15   | 0    | 0    | 15         | 0                         | 0    | 0    | 0    | 0          | 27         |
| 04:30 PM    | 3                   | 24   | 1    | 0    | 28         | 1                         | 0    | 0    | 0    | 1          | 0                   | 18   | 0    | 0    | 18         | 0                         | 0    | 0    | 0    | 0          | 47         |
| 04:45 PM    | 0                   | 11   | 0    | 0    | 11         | 0                         | 0    | 0    | 0    | 0          | 0                   | 17   | 0    | 0    | 17         | 0                         | 0    | 0    | 0    | 0          | 28         |
| Total       | 3                   | 62   | 1    | 0    | 66         | 3                         | 0    | 0    | 0    | 3          | 0                   | 62   | 1    | 0    | 63         | 1                         | 0    | 0    | 0    | 1          | 133        |
| 05:00 PM    | 0                   | 11   | 0    | 0    | 11         | 0                         | 0    | 0    | 0    | 0          | 0                   | 10   | 0    | 0    | 10         | 0                         | 0    | 0    | 0    | 0          | 21         |
| 05:15 PM    | 0                   | 5    | 0    | 0    | 5          | 0                         | 0    | 0    | 0    | 0          | 0                   | 9    | 0    | 0    | 9          | 0                         | 0    | 0    | 0    | 0          | 14         |
| 05:30 PM    | 0                   | 4    | 0    | 0    | 4          | 0                         | 0    | 0    | 0    | 0          | 0                   | 4    | 0    | 0    | 4          | 0                         | 0    | 0    | 0    | 0          | 8          |
| 05:45 PM    | 0                   | 6    | 0    | 0    | 6          | 1                         | 0    | 0    | 0    | 1          | 1                   | 4    | 0    | 0    | 5          | 0                         | 0    | 0    | 0    | 0          | 12         |
| Total       | 0                   | 26   | 0    | 0    | 26         | 1                         | 0    | 0    | 0    | 1          | 1                   | 27   | 0    | 0    | 28         | 0                         | 0    | 0    | 0    | 0          | 55         |
| Grand Total | 3                   | 88   | 1    | 0    | 92         | 4                         | 0    | 0    | 0    | 4          | 1                   | 89   | 1    | 0    | 91         | 1                         | 0    | 0    | 0    | 1          | 188        |
| Apprch %    | 3.3                 | 95.7 | 1.1  | 0    |            | 100                       | 0    | 0    | 0    |            | 1.1                 | 97.8 | 1.1  | 0    |            | 100                       | 0    | 0    | 0    |            |            |
| Total %     | 1.6                 | 46.8 | 0.5  | 0    | 48.9       | 2.1                       | 0    | 0    | 0    | 2.1        | 0.5                 | 47.3 | 0.5  | 0    | 48.4       | 0.5                       | 0    | 0    | 0    | 0.5        |            |

|                                                            | US 29<br>Southbound |      |      |            | Northside Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Northside Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 04:00 PM                                                   | 0                   | 15   | 0    | 15         | 2                         | 0    | 0    | 2          | 0                   | 12   | 1    | 13         | 1                         | 0    | 0    | 1          | 31         |
| 04:15 PM                                                   | 0                   | 12   | 0    | 12         | 0                         | 0    | 0    | 0          | 0                   | 15   | 0    | 15         | 0                         | 0    | 0    | 0          | 27         |
| 04:30 PM                                                   | 3                   | 24   | 1    | 28         | 1                         | 0    | 0    | 1          | 0                   | 18   | 0    | 18         | 0                         | 0    | 0    | 0          | 47         |
| 04:45 PM                                                   | 0                   | 11   | 0    | 11         | 0                         | 0    | 0    | 0          | 0                   | 17   | 0    | 17         | 0                         | 0    | 0    | 0          | 28         |
| Total Volume                                               | 3                   | 62   | 1    | 66         | 3                         | 0    | 0    | 3          | 0                   | 62   | 1    | 63         | 1                         | 0    | 0    | 1          | 133        |
| % App. Total                                               | 4.5                 | 93.9 | 1.5  |            | 100                       | 0    | 0    |            | 0                   | 98.4 | 1.6  |            | 100                       | 0    | 0    |            |            |
| PHF                                                        | .250                | .646 | .250 | .589       | .375                      | .000 | .000 | .375       | .000                | .861 | .250 | .875       | .250                      | .000 | .000 | .250       | .707       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 10\_US 29 & Northside Dr PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Northside Dr<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Northside Dr<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|---------------------|------|------|------|------------|---------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                     | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 331  | 2    | 0    | 333        | 3                         | 0    | 0    | 0    | 3          | 0                   | 382  | 2    | 0    | 384        | 1                         | 0    | 0    | 0    | 1          | 721        |
| 04:15 PM    | 1                   | 304  | 4    | 0    | 309        | 0                         | 0    | 0    | 0    | 0          | 0                   | 395  | 2    | 0    | 397        | 4                         | 0    | 0    | 0    | 4          | 710        |
| 04:30 PM    | 3                   | 344  | 7    | 0    | 354        | 3                         | 0    | 0    | 0    | 3          | 2                   | 427  | 1    | 0    | 430        | 1                         | 0    | 0    | 0    | 1          | 788        |
| 04:45 PM    | 1                   | 299  | 3    | 0    | 303        | 1                         | 0    | 0    | 0    | 1          | 0                   | 461  | 1    | 0    | 462        | 5                         | 0    | 0    | 0    | 5          | 771        |
| Total       | 5                   | 1278 | 16   | 0    | 1299       | 7                         | 0    | 0    | 0    | 7          | 2                   | 1665 | 6    | 0    | 1673       | 11                        | 0    | 0    | 0    | 11         | 2990       |
| 05:00 PM    | 0                   | 314  | 7    | 0    | 321        | 0                         | 0    | 0    | 0    | 0          | 0                   | 490  | 1    | 0    | 491        | 6                         | 0    | 0    | 0    | 6          | 818        |
| 05:15 PM    | 0                   | 283  | 1    | 0    | 284        | 3                         | 0    | 0    | 0    | 3          | 0                   | 514  | 2    | 0    | 516        | 5                         | 0    | 0    | 0    | 5          | 808        |
| 05:30 PM    | 0                   | 270  | 2    | 0    | 272        | 9                         | 0    | 0    | 0    | 9          | 0                   | 453  | 1    | 0    | 454        | 1                         | 0    | 0    | 0    | 1          | 736        |
| 05:45 PM    | 0                   | 269  | 2    | 0    | 271        | 4                         | 0    | 0    | 0    | 4          | 1                   | 397  | 0    | 0    | 398        | 1                         | 0    | 0    | 0    | 1          | 674        |
| Total       | 0                   | 1136 | 12   | 0    | 1148       | 16                        | 0    | 0    | 0    | 16         | 1                   | 1854 | 4    | 0    | 1859       | 13                        | 0    | 0    | 0    | 13         | 3036       |
| Grand Total | 5                   | 2414 | 28   | 0    | 2447       | 23                        | 0    | 0    | 0    | 23         | 3                   | 3519 | 10   | 0    | 3532       | 24                        | 0    | 0    | 0    | 24         | 6026       |
| Apprch %    | 0.2                 | 98.7 | 1.1  | 0    |            | 100                       | 0    | 0    | 0    |            | 0.1                 | 99.6 | 0.3  | 0    |            | 100                       | 0    | 0    | 0    |            |            |
| Total %     | 0.1                 | 40.1 | 0.5  | 0    | 40.6       | 0.4                       | 0    | 0    | 0    | 0.4        | 0                   | 58.4 | 0.2  | 0    | 58.6       | 0.4                       | 0    | 0    | 0    | 0.4        |            |

|                                                            | US 29<br>Southbound |      |      |            | Northside Dr<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Northside Dr<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------------|------|------|------------|---------------------|------|------|------------|---------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                     | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                           |      |      |            |                     |      |      |            |                           |      |      |            |            |
| 04:30 PM                                                   | 3                   | 344  | 7    | 354        | 3                         | 0    | 0    | 3          | 2                   | 427  | 1    | 430        | 1                         | 0    | 0    | 1          | 788        |
| 04:45 PM                                                   | 1                   | 299  | 3    | 303        | 1                         | 0    | 0    | 1          | 0                   | 461  | 1    | 462        | 5                         | 0    | 0    | 5          | 771        |
| 05:00 PM                                                   | 0                   | 314  | 7    | 321        | 0                         | 0    | 0    | 0          | 0                   | 490  | 1    | 491        | 6                         | 0    | 0    | 6          | 818        |
| 05:15 PM                                                   | 0                   | 283  | 1    | 284        | 3                         | 0    | 0    | 3          | 0                   | 514  | 2    | 516        | 5                         | 0    | 0    | 5          | 808        |
| Total Volume                                               | 4                   | 1240 | 18   | 1262       | 7                         | 0    | 0    | 7          | 2                   | 1892 | 5    | 1899       | 17                        | 0    | 0    | 17         | 3185       |
| % App. Total                                               | 0.3                 | 98.3 | 1.4  |            | 100                       | 0    | 0    |            | 0.1                 | 99.6 | 0.3  |            | 100                       | 0    | 0    |            |            |
| PHF                                                        | .333                | .901 | .643 | .891       | .583                      | .000 | .000 | .583       | .250                | .920 | .625 | .920       | .708                      | .000 | .000 | .708       | .973       |

Peggy Malone & Associates  
(888) 247-8602

File Name : 11\_US 29 & Airport Acres Rd (N) AM  
Site Code :  
Start Date : 4/13/2021  
Page No : 1

Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 07:00 AM    | 1                | 360  | 1    | 0    | 362        | 169              | 0    | 0    | 169        | 3                          | 0    | 0    | 3          | 534        |
| 07:15 AM    | 0                | 517  | 1    | 0    | 518        | 168              | 0    | 0    | 168        | 1                          | 0    | 0    | 1          | 687        |
| 07:30 AM    | 0                | 522  | 0    | 0    | 522        | 199              | 0    | 0    | 199        | 1                          | 0    | 0    | 1          | 722        |
| 07:45 AM    | 0                | 411  | 0    | 0    | 411        | 271              | 0    | 0    | 271        | 0                          | 0    | 0    | 0          | 682        |
| Total       | 1                | 1810 | 2    | 0    | 1813       | 807              | 0    | 0    | 807        | 5                          | 0    | 0    | 5          | 2625       |
| 08:00 AM    | 0                | 362  | 0    | 0    | 362        | 220              | 1    | 0    | 221        | 1                          | 0    | 0    | 1          | 584        |
| 08:15 AM    | 0                | 402  | 0    | 0    | 402        | 230              | 1    | 0    | 231        | 3                          | 0    | 0    | 3          | 636        |
| 08:30 AM    | 0                | 374  | 2    | 0    | 376        | 201              | 0    | 0    | 201        | 1                          | 0    | 0    | 1          | 578        |
| 08:45 AM    | 1                | 367  | 0    | 0    | 368        | 229              | 1    | 0    | 230        | 1                          | 0    | 0    | 1          | 599        |
| Total       | 1                | 1505 | 2    | 0    | 1508       | 880              | 3    | 0    | 883        | 6                          | 0    | 0    | 6          | 2397       |
| Grand Total | 2                | 3315 | 4    | 0    | 3321       | 1687             | 3    | 0    | 1690       | 11                         | 0    | 0    | 11         | 5022       |
| Apprch %    | 0.1              | 99.8 | 0.1  | 0    |            | 99.8             | 0.2  | 0    |            | 100                        | 0    | 0    |            |            |
| Total %     | 0                | 66   | 0.1  | 0    | 66.1       | 33.6             | 0.1  | 0    | 33.7       | 0.2                        | 0    | 0    | 0.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 07:15 AM                                                   | 0                   | 517  | 1    | 518        | 168                 | 0    | 168        | 1                             | 0    | 1          | 687        |
| 07:30 AM                                                   | 0                   | 522  | 0    | 522        | 199                 | 0    | 199        | 1                             | 0    | 1          | 722        |
| 07:45 AM                                                   | 0                   | 411  | 0    | 411        | 271                 | 0    | 271        | 0                             | 0    | 0          | 682        |
| 08:00 AM                                                   | 0                   | 362  | 0    | 362        | 220                 | 1    | 221        | 1                             | 0    | 1          | 584        |
| Total Volume                                               | 0                   | 1812 | 1    | 1813       | 858                 | 1    | 859        | 3                             | 0    | 3          | 2675       |
| % App. Total                                               | 0                   | 99.9 | 0.1  |            | 99.9                | 0.1  |            | 100                           | 0    |            |            |
| PHF                                                        | .000                | .868 | .250 | .868       | .792                | .250 | .792       | .750                          | .000 | .750       | .926       |

Peggy Malone & Associates  
(888) 247-8602

File Name : 11\_US 29 & Airport Acres Rd (N) AM  
Site Code :  
Start Date : 4/13/2021  
Page No : 1

Groups Printed- Trucks

| Start Time  | US 29<br>Southbound |      |      |      |            | US 29<br>Northbound |      |      |            | Airport Acres Rd<br>Eastbound |      |      |            | Int. Total |
|-------------|---------------------|------|------|------|------------|---------------------|------|------|------------|-------------------------------|------|------|------------|------------|
|             | Right               | Thru | Left | Peds | App. Total | Thru                | Left | Peds | App. Total | Right                         | Left | Peds | App. Total |            |
| 07:00 AM    | 0                   | 18   | 0    | 0    | 18         | 17                  | 1    | 0    | 18         | 0                             | 0    | 0    | 0          | 36         |
| 07:15 AM    | 1                   | 30   | 0    | 0    | 31         | 17                  | 0    | 0    | 17         | 0                             | 0    | 0    | 0          | 48         |
| 07:30 AM    | 0                   | 19   | 0    | 0    | 19         | 16                  | 0    | 0    | 16         | 0                             | 0    | 0    | 0          | 35         |
| 07:45 AM    | 0                   | 14   | 0    | 0    | 14         | 11                  | 0    | 0    | 11         | 0                             | 0    | 0    | 0          | 25         |
| Total       | 1                   | 81   | 0    | 0    | 82         | 61                  | 1    | 0    | 62         | 0                             | 0    | 0    | 0          | 144        |
| 08:00 AM    | 0                   | 18   | 0    | 0    | 18         | 16                  | 0    | 0    | 16         | 0                             | 0    | 0    | 0          | 34         |
| 08:15 AM    | 0                   | 17   | 0    | 0    | 17         | 19                  | 0    | 0    | 19         | 0                             | 0    | 0    | 0          | 36         |
| 08:30 AM    | 0                   | 24   | 0    | 0    | 24         | 19                  | 0    | 0    | 19         | 0                             | 0    | 0    | 0          | 43         |
| 08:45 AM    | 0                   | 14   | 1    | 0    | 15         | 21                  | 0    | 0    | 21         | 0                             | 0    | 0    | 0          | 36         |
| Total       | 0                   | 73   | 1    | 0    | 74         | 75                  | 0    | 0    | 75         | 0                             | 0    | 0    | 0          | 149        |
| Grand Total | 1                   | 154  | 1    | 0    | 156        | 136                 | 1    | 0    | 137        | 0                             | 0    | 0    | 0          | 293        |
| Apprch %    | 0.6                 | 98.7 | 0.6  | 0    |            | 99.3                | 0.7  | 0    |            | 0                             | 0    | 0    |            |            |
| Total %     | 0.3                 | 52.6 | 0.3  | 0    | 53.2       | 46.4                | 0.3  | 0    | 46.8       | 0                             | 0    | 0    | 0          |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 08:00 AM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 08:00 AM                                                   | 0                   | 18   | 0    | 18         | 16                  | 0    | 16         | 0                             | 0    | 0          | 34         |
| 08:15 AM                                                   | 0                   | 17   | 0    | 17         | 19                  | 0    | 19         | 0                             | 0    | 0          | 36         |
| 08:30 AM                                                   | 0                   | 24   | 0    | 24         | 19                  | 0    | 19         | 0                             | 0    | 0          | 43         |
| 08:45 AM                                                   | 0                   | 14   | 1    | 15         | 21                  | 0    | 21         | 0                             | 0    | 0          | 36         |
| Total Volume                                               | 0                   | 73   | 1    | 74         | 75                  | 0    | 75         | 0                             | 0    | 0          | 149        |
| % App. Total                                               | 0                   | 98.6 | 1.4  |            | 100                 | 0    |            | 0                             | 0    |            |            |
| PHF                                                        | .000                | .760 | .250 | .771       | .893                | .000 | .893       | .000                          | .000 | .000       | .866       |

Peggy Malone & Associates  
(888) 247-8602

File Name : 11\_US 29 & Airport Acres Rd (N) AM  
Site Code :  
Start Date : 4/13/2021  
Page No : 1

Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 07:00 AM    | 1                | 378  | 1    | 0    | 380        | 186              | 1    | 0    | 187        | 3                          | 0    | 0    | 3          | 570        |
| 07:15 AM    | 1                | 547  | 1    | 0    | 549        | 185              | 0    | 0    | 185        | 1                          | 0    | 0    | 1          | 735        |
| 07:30 AM    | 0                | 541  | 0    | 0    | 541        | 215              | 0    | 0    | 215        | 1                          | 0    | 0    | 1          | 757        |
| 07:45 AM    | 0                | 425  | 0    | 0    | 425        | 282              | 0    | 0    | 282        | 0                          | 0    | 0    | 0          | 707        |
| Total       | 2                | 1891 | 2    | 0    | 1895       | 868              | 1    | 0    | 869        | 5                          | 0    | 0    | 5          | 2769       |
| 08:00 AM    | 0                | 380  | 0    | 0    | 380        | 236              | 1    | 0    | 237        | 1                          | 0    | 0    | 1          | 618        |
| 08:15 AM    | 0                | 419  | 0    | 0    | 419        | 249              | 1    | 0    | 250        | 3                          | 0    | 0    | 3          | 672        |
| 08:30 AM    | 0                | 398  | 2    | 0    | 400        | 220              | 0    | 0    | 220        | 1                          | 0    | 0    | 1          | 621        |
| 08:45 AM    | 1                | 381  | 1    | 0    | 383        | 250              | 1    | 0    | 251        | 1                          | 0    | 0    | 1          | 635        |
| Total       | 1                | 1578 | 3    | 0    | 1582       | 955              | 3    | 0    | 958        | 6                          | 0    | 0    | 6          | 2546       |
| Grand Total | 3                | 3469 | 5    | 0    | 3477       | 1823             | 4    | 0    | 1827       | 11                         | 0    | 0    | 11         | 5315       |
| Apprch %    | 0.1              | 99.8 | 0.1  | 0    |            | 99.8             | 0.2  | 0    |            | 100                        | 0    | 0    |            |            |
| Total %     | 0.1              | 65.3 | 0.1  | 0    | 65.4       | 34.3             | 0.1  | 0    | 34.4       | 0.2                        | 0    | 0    | 0.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 07:15 AM                                                   | 1                   | 547  | 1    | 549        | 185                 | 0    | 185        | 1                             | 0    | 1          | 735        |
| 07:30 AM                                                   | 0                   | 541  | 0    | 541        | 215                 | 0    | 215        | 1                             | 0    | 1          | 757        |
| 07:45 AM                                                   | 0                   | 425  | 0    | 425        | 282                 | 0    | 282        | 0                             | 0    | 0          | 707        |
| 08:00 AM                                                   | 0                   | 380  | 0    | 380        | 236                 | 1    | 237        | 1                             | 0    | 1          | 618        |
| Total Volume                                               | 1                   | 1893 | 1    | 1895       | 918                 | 1    | 919        | 3                             | 0    | 3          | 2817       |
| % App. Total                                               | 0.1                 | 99.9 | 0.1  |            | 99.9                | 0.1  |            | 100                           | 0    |            |            |
| PHF                                                        | .250                | .865 | .250 | .863       | .814                | .250 | .815       | .750                          | .000 | .750       | .930       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 11\_US 29 & Airport Acres Rd (N) PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 317  | 0    | 0    | 317        | 362              | 2    | 0    | 364        | 1                          | 0    | 0    | 1          | 682        |
| 04:15 PM    | 1                | 283  | 0    | 0    | 284        | 384              | 0    | 0    | 384        | 3                          | 0    | 0    | 3          | 671        |
| 04:30 PM    | 0                | 323  | 0    | 0    | 323        | 412              | 1    | 0    | 413        | 0                          | 0    | 0    | 0          | 736        |
| 04:45 PM    | 1                | 288  | 2    | 0    | 291        | 458              | 3    | 0    | 461        | 0                          | 0    | 0    | 0          | 752        |
| Total       | 2                | 1211 | 2    | 0    | 1215       | 1616             | 6    | 0    | 1622       | 4                          | 0    | 0    | 4          | 2841       |
| 05:00 PM    | 1                | 333  | 1    | 0    | 335        | 461              | 0    | 0    | 461        | 1                          | 0    | 0    | 1          | 797        |
| 05:15 PM    | 1                | 284  | 4    | 0    | 289        | 491              | 3    | 0    | 494        | 3                          | 0    | 0    | 3          | 786        |
| 05:30 PM    | 0                | 271  | 0    | 0    | 271        | 427              | 1    | 0    | 428        | 2                          | 0    | 0    | 2          | 701        |
| 05:45 PM    | 0                | 248  | 2    | 0    | 250        | 371              | 1    | 0    | 372        | 1                          | 0    | 0    | 1          | 623        |
| Total       | 2                | 1136 | 7    | 0    | 1145       | 1750             | 5    | 0    | 1755       | 7                          | 0    | 0    | 7          | 2907       |
| Grand Total | 4                | 2347 | 9    | 0    | 2360       | 3366             | 11   | 0    | 3377       | 11                         | 0    | 0    | 11         | 5748       |
| Apprch %    | 0.2              | 99.4 | 0.4  | 0    |            | 99.7             | 0.3  | 0    |            | 100                        | 0    | 0    |            |            |
| Total %     | 0.1              | 40.8 | 0.2  | 0    | 41.1       | 58.6             | 0.2  | 0    | 58.8       | 0.2                        | 0    | 0    | 0.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 04:30 PM                                                   | 0                   | 323  | 0    | 323        | 412                 | 1    | 413        | 0                             | 0    | 0          | 736        |
| 04:45 PM                                                   | 1                   | 288  | 2    | 291        | 458                 | 3    | 461        | 0                             | 0    | 0          | 752        |
| 05:00 PM                                                   | 1                   | 333  | 1    | 335        | 461                 | 0    | 461        | 1                             | 0    | 1          | 797        |
| 05:15 PM                                                   | 1                   | 284  | 4    | 289        | 491                 | 3    | 494        | 3                             | 0    | 3          | 786        |
| Total Volume                                               | 3                   | 1228 | 7    | 1238       | 1822                | 7    | 1829       | 4                             | 0    | 4          | 3071       |
| % App. Total                                               | 0.2                 | 99.2 | 0.6  |            | 99.6                | 0.4  |            | 100                           | 0    |            |            |
| PHF                                                        | .750                | .922 | .438 | .924       | .928                | .583 | .926       | .333                          | .000 | .333       | .963       |

Peggy Malone & Associates  
(888) 247-8602

File Name : 11\_US 29 & Airport Acres Rd (N) PM  
Site Code :  
Start Date : 4/13/2021  
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Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | US 29<br>Northbound |      |      |            | Airport Acres Rd<br>Eastbound |      |      |            |            |
|-------------|---------------------|------|------|------|------------|---------------------|------|------|------------|-------------------------------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Thru                | Left | Peds | App. Total | Right                         | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 0                   | 16   | 1    | 0    | 17         | 13                  | 0    | 0    | 13         | 0                             | 0    | 0    | 0          | 30         |
| 04:15 PM    | 0                   | 12   | 0    | 0    | 12         | 16                  | 0    | 0    | 16         | 1                             | 0    | 0    | 1          | 29         |
| 04:30 PM    | 1                   | 23   | 0    | 0    | 24         | 18                  | 0    | 0    | 18         | 0                             | 0    | 0    | 0          | 42         |
| 04:45 PM    | 0                   | 12   | 0    | 0    | 12         | 17                  | 0    | 0    | 17         | 0                             | 0    | 0    | 0          | 29         |
| Total       | 1                   | 63   | 1    | 0    | 65         | 64                  | 0    | 0    | 64         | 1                             | 0    | 0    | 1          | 130        |
| 05:00 PM    | 0                   | 11   | 0    | 0    | 11         | 10                  | 0    | 0    | 10         | 0                             | 0    | 0    | 0          | 21         |
| 05:15 PM    | 0                   | 5    | 0    | 0    | 5          | 8                   | 0    | 0    | 8          | 0                             | 0    | 0    | 0          | 13         |
| 05:30 PM    | 1                   | 3    | 0    | 0    | 4          | 5                   | 0    | 0    | 5          | 0                             | 0    | 0    | 0          | 9          |
| 05:45 PM    | 0                   | 7    | 0    | 0    | 7          | 5                   | 0    | 0    | 5          | 0                             | 0    | 0    | 0          | 12         |
| Total       | 1                   | 26   | 0    | 0    | 27         | 28                  | 0    | 0    | 28         | 0                             | 0    | 0    | 0          | 55         |
| Grand Total | 2                   | 89   | 1    | 0    | 92         | 92                  | 0    | 0    | 92         | 1                             | 0    | 0    | 1          | 185        |
| Apprch %    | 2.2                 | 96.7 | 1.1  | 0    |            | 100                 | 0    | 0    |            | 100                           | 0    | 0    |            |            |
| Total %     | 1.1                 | 48.1 | 0.5  | 0    | 49.7       | 49.7                | 0    | 0    | 49.7       | 0.5                           | 0    | 0    | 0.5        |            |

|                                                            | US 29<br>Southbound |           |          |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|-----------|----------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru      | Left     | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |           |          |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |           |          |            |                     |      |            |                               |      |            |            |
| 04:00 PM                                                   | 0                   | 16        | <b>1</b> | 17         | 13                  | 0    | 13         | 0                             | 0    | 0          | 30         |
| 04:15 PM                                                   | 0                   | 12        | 0        | 12         | 16                  | 0    | 16         | <b>1</b>                      | 0    | <b>1</b>   | 29         |
| 04:30 PM                                                   | <b>1</b>            | <b>23</b> | 0        | <b>24</b>  | <b>18</b>           | 0    | <b>18</b>  | 0                             | 0    | 0          | <b>42</b>  |
| 04:45 PM                                                   | 0                   | 12        | 0        | 12         | 17                  | 0    | 17         | 0                             | 0    | 0          | 29         |
| Total Volume                                               | 1                   | 63        | 1        | 65         | 64                  | 0    | 64         | 1                             | 0    | 1          | 130        |
| % App. Total                                               | 1.5                 | 96.9      | 1.5      |            | 100                 | 0    |            | 100                           | 0    |            |            |
| PHF                                                        | .250                | .685      | .250     | .677       | .889                | .000 | .889       | .250                          | .000 | .250       | .774       |

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(888) 247-8602

File Name : 11\_US 29 & Airport Acres Rd (N) PM  
Site Code :  
Start Date : 4/13/2021  
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Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 333  | 1    | 0    | 334        | 375              | 2    | 0    | 377        | 1                          | 0    | 0    | 1          | 712        |
| 04:15 PM    | 1                | 295  | 0    | 0    | 296        | 400              | 0    | 0    | 400        | 4                          | 0    | 0    | 4          | 700        |
| 04:30 PM    | 1                | 346  | 0    | 0    | 347        | 430              | 1    | 0    | 431        | 0                          | 0    | 0    | 0          | 778        |
| 04:45 PM    | 1                | 300  | 2    | 0    | 303        | 475              | 3    | 0    | 478        | 0                          | 0    | 0    | 0          | 781        |
| Total       | 3                | 1274 | 3    | 0    | 1280       | 1680             | 6    | 0    | 1686       | 5                          | 0    | 0    | 5          | 2971       |
| 05:00 PM    | 1                | 344  | 1    | 0    | 346        | 471              | 0    | 0    | 471        | 1                          | 0    | 0    | 1          | 818        |
| 05:15 PM    | 1                | 289  | 4    | 0    | 294        | 499              | 3    | 0    | 502        | 3                          | 0    | 0    | 3          | 799        |
| 05:30 PM    | 1                | 274  | 0    | 0    | 275        | 432              | 1    | 0    | 433        | 2                          | 0    | 0    | 2          | 710        |
| 05:45 PM    | 0                | 255  | 2    | 0    | 257        | 376              | 1    | 0    | 377        | 1                          | 0    | 0    | 1          | 635        |
| Total       | 3                | 1162 | 7    | 0    | 1172       | 1778             | 5    | 0    | 1783       | 7                          | 0    | 0    | 7          | 2962       |
| Grand Total | 6                | 2436 | 10   | 0    | 2452       | 3458             | 11   | 0    | 3469       | 12                         | 0    | 0    | 12         | 5933       |
| Apprch %    | 0.2              | 99.3 | 0.4  | 0    |            | 99.7             | 0.3  | 0    |            | 100                        | 0    | 0    |            |            |
| Total %     | 0.1              | 41.1 | 0.2  | 0    | 41.3       | 58.3             | 0.2  | 0    | 58.5       | 0.2                        | 0    | 0    | 0.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 04:30 PM                                                   | 1                   | 346  | 0    | 347        | 430                 | 1    | 431        | 0                             | 0    | 0          | 778        |
| 04:45 PM                                                   | 1                   | 300  | 2    | 303        | 475                 | 3    | 478        | 0                             | 0    | 0          | 781        |
| 05:00 PM                                                   | 1                   | 344  | 1    | 346        | 471                 | 0    | 471        | 1                             | 0    | 1          | 818        |
| 05:15 PM                                                   | 1                   | 289  | 4    | 294        | 499                 | 3    | 502        | 3                             | 0    | 3          | 799        |
| Total Volume                                               | 4                   | 1279 | 7    | 1290       | 1875                | 7    | 1882       | 4                             | 0    | 4          | 3176       |
| % App. Total                                               | 0.3                 | 99.1 | 0.5  |            | 99.6                | 0.4  |            | 100                           | 0    |            |            |
| PHF                                                        | 1.00                | .924 | .438 | .929       | .939                | .583 | .937       | .333                          | .000 | .333       | .971       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 12\_US 29 & Airport Acres Rd (S) AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 07:00 AM    | 0                | 362  | 0    | 0    | 362        | 167              | 0    | 0    | 167        | 2                          | 0    | 0    | 2          | 531        |
| 07:15 AM    | 0                | 497  | 0    | 0    | 497        | 169              | 0    | 0    | 169        | 1                          | 0    | 0    | 1          | 667        |
| 07:30 AM    | 0                | 533  | 0    | 0    | 533        | 184              | 0    | 0    | 184        | 0                          | 1    | 0    | 1          | 718        |
| 07:45 AM    | 0                | 418  | 0    | 0    | 418        | 265              | 9    | 0    | 274        | 0                          | 0    | 0    | 0          | 692        |
| Total       | 0                | 1810 | 0    | 0    | 1810       | 785              | 9    | 0    | 794        | 3                          | 1    | 0    | 4          | 2608       |
| 08:00 AM    | 1                | 355  | 0    | 0    | 356        | 213              | 6    | 0    | 219        | 3                          | 1    | 0    | 4          | 579        |
| 08:15 AM    | 1                | 404  | 1    | 0    | 406        | 229              | 3    | 0    | 232        | 2                          | 1    | 0    | 3          | 641        |
| 08:30 AM    | 1                | 365  | 0    | 0    | 366        | 203              | 0    | 0    | 203        | 2                          | 0    | 0    | 2          | 571        |
| 08:45 AM    | 0                | 360  | 0    | 0    | 360        | 219              | 8    | 0    | 227        | 1                          | 1    | 0    | 2          | 589        |
| Total       | 3                | 1484 | 1    | 0    | 1488       | 864              | 17   | 0    | 881        | 8                          | 3    | 0    | 11         | 2380       |
| Grand Total | 3                | 3294 | 1    | 0    | 3298       | 1649             | 26   | 0    | 1675       | 11                         | 4    | 0    | 15         | 4988       |
| Apprch %    | 0.1              | 99.9 | 0    | 0    |            | 98.4             | 1.6  | 0    |            | 73.3                       | 26.7 | 0    |            |            |
| Total %     | 0.1              | 66   | 0    | 0    | 66.1       | 33.1             | 0.5  | 0    | 33.6       | 0.2                        | 0.1  | 0    | 0.3        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 07:15 AM                                                   | 0                   | 497  | 0    | 497        | 169                 | 0    | 169        | 1                             | 0    | 1          | 667        |
| 07:30 AM                                                   | 0                   | 533  | 0    | 533        | 184                 | 0    | 184        | 0                             | 1    | 1          | 718        |
| 07:45 AM                                                   | 0                   | 418  | 0    | 418        | 265                 | 9    | 274        | 0                             | 0    | 0          | 692        |
| 08:00 AM                                                   | 1                   | 355  | 0    | 356        | 213                 | 6    | 219        | 3                             | 1    | 4          | 579        |
| Total Volume                                               | 1                   | 1803 | 0    | 1804       | 831                 | 15   | 846        | 4                             | 2    | 6          | 2656       |
| % App. Total                                               | 0.1                 | 99.9 | 0    |            | 98.2                | 1.8  |            | 66.7                          | 33.3 |            |            |
| PHF                                                        | .250                | .846 | .000 | .846       | .784                | .417 | .772       | .333                          | .500 | .375       | .925       |

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File Name : 12\_US 29 & Airport Acres Rd (S) AM  
Site Code :  
Start Date : 4/13/2021  
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Groups Printed- Trucks

| Start Time  | US 29<br>Southbound |      |      |      |            | US 29<br>Northbound |      |      |            | Airport Acres Rd<br>Eastbound |      |      |            | Int. Total |
|-------------|---------------------|------|------|------|------------|---------------------|------|------|------------|-------------------------------|------|------|------------|------------|
|             | Right               | Thru | Left | Peds | App. Total | Thru                | Left | Peds | App. Total | Right                         | Left | Peds | App. Total |            |
| 07:00 AM    | 0                   | 17   | 0    | 0    | 17         | 17                  | 0    | 0    | 17         | 0                             | 0    | 0    | 0          | 34         |
| 07:15 AM    | 0                   | 30   | 0    | 0    | 30         | 17                  | 0    | 0    | 17         | 0                             | 0    | 0    | 0          | 47         |
| 07:30 AM    | 0                   | 21   | 0    | 0    | 21         | 16                  | 0    | 0    | 16         | 1                             | 0    | 0    | 1          | 38         |
| 07:45 AM    | 0                   | 16   | 0    | 0    | 16         | 11                  | 0    | 0    | 11         | 0                             | 0    | 0    | 0          | 27         |
| Total       | 0                   | 84   | 0    | 0    | 84         | 61                  | 0    | 0    | 61         | 1                             | 0    | 0    | 1          | 146        |
| 08:00 AM    | 0                   | 19   | 0    | 0    | 19         | 13                  | 0    | 0    | 13         | 0                             | 0    | 0    | 0          | 32         |
| 08:15 AM    | 0                   | 15   | 0    | 0    | 15         | 20                  | 0    | 0    | 20         | 0                             | 0    | 0    | 0          | 35         |
| 08:30 AM    | 0                   | 23   | 0    | 0    | 23         | 19                  | 0    | 0    | 19         | 0                             | 0    | 0    | 0          | 42         |
| 08:45 AM    | 0                   | 16   | 0    | 0    | 16         | 22                  | 0    | 0    | 22         | 0                             | 0    | 0    | 0          | 38         |
| Total       | 0                   | 73   | 0    | 0    | 73         | 74                  | 0    | 0    | 74         | 0                             | 0    | 0    | 0          | 147        |
| Grand Total | 0                   | 157  | 0    | 0    | 157        | 135                 | 0    | 0    | 135        | 1                             | 0    | 0    | 1          | 293        |
| Apprch %    | 0                   | 100  | 0    | 0    |            | 100                 | 0    | 0    |            | 100                           | 0    | 0    |            |            |
| Total %     | 0                   | 53.6 | 0    | 0    | 53.6       | 46.1                | 0    | 0    | 46.1       | 0.3                           | 0    | 0    | 0.3        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 08:00 AM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 08:00 AM                                                   | 0                   | 19   | 0    | 19         | 13                  | 0    | 13         | 0                             | 0    | 0          | 32         |
| 08:15 AM                                                   | 0                   | 15   | 0    | 15         | 20                  | 0    | 20         | 0                             | 0    | 0          | 35         |
| 08:30 AM                                                   | 0                   | 23   | 0    | 23         | 19                  | 0    | 19         | 0                             | 0    | 0          | 42         |
| 08:45 AM                                                   | 0                   | 16   | 0    | 16         | 22                  | 0    | 22         | 0                             | 0    | 0          | 38         |
| Total Volume                                               | 0                   | 73   | 0    | 73         | 74                  | 0    | 74         | 0                             | 0    | 0          | 147        |
| % App. Total                                               | 0                   | 100  | 0    |            | 100                 | 0    |            | 0                             | 0    |            |            |
| PHF                                                        | .000                | .793 | .000 | .793       | .841                | .000 | .841       | .000                          | .000 | .000       | .875       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 12\_US 29 & Airport Acres Rd (S) AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 07:00 AM    | 0                | 379  | 0    | 0    | 379        | 184              | 0    | 0    | 184        | 2                          | 0    | 0    | 2          | 565        |
| 07:15 AM    | 0                | 527  | 0    | 0    | 527        | 186              | 0    | 0    | 186        | 1                          | 0    | 0    | 1          | 714        |
| 07:30 AM    | 0                | 554  | 0    | 0    | 554        | 200              | 0    | 0    | 200        | 1                          | 1    | 0    | 2          | 756        |
| 07:45 AM    | 0                | 434  | 0    | 0    | 434        | 276              | 9    | 0    | 285        | 0                          | 0    | 0    | 0          | 719        |
| Total       | 0                | 1894 | 0    | 0    | 1894       | 846              | 9    | 0    | 855        | 4                          | 1    | 0    | 5          | 2754       |
| 08:00 AM    | 1                | 374  | 0    | 0    | 375        | 226              | 6    | 0    | 232        | 3                          | 1    | 0    | 4          | 611        |
| 08:15 AM    | 1                | 419  | 1    | 0    | 421        | 249              | 3    | 0    | 252        | 2                          | 1    | 0    | 3          | 676        |
| 08:30 AM    | 1                | 388  | 0    | 0    | 389        | 222              | 0    | 0    | 222        | 2                          | 0    | 0    | 2          | 613        |
| 08:45 AM    | 0                | 376  | 0    | 0    | 376        | 241              | 8    | 0    | 249        | 1                          | 1    | 0    | 2          | 627        |
| Total       | 3                | 1557 | 1    | 0    | 1561       | 938              | 17   | 0    | 955        | 8                          | 3    | 0    | 11         | 2527       |
| Grand Total | 3                | 3451 | 1    | 0    | 3455       | 1784             | 26   | 0    | 1810       | 12                         | 4    | 0    | 16         | 5281       |
| Apprch %    | 0.1              | 99.9 | 0    | 0    |            | 98.6             | 1.4  | 0    |            | 75                         | 25   | 0    |            |            |
| Total %     | 0.1              | 65.3 | 0    | 0    | 65.4       | 33.8             | 0.5  | 0    | 34.3       | 0.2                        | 0.1  | 0    | 0.3        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 07:15 AM                                                   | 0                   | 527  | 0    | 527        | 186                 | 0    | 186        | 1                             | 0    | 1          | 714        |
| 07:30 AM                                                   | 0                   | 554  | 0    | 554        | 200                 | 0    | 200        | 1                             | 1    | 2          | 756        |
| 07:45 AM                                                   | 0                   | 434  | 0    | 434        | 276                 | 9    | 285        | 0                             | 0    | 0          | 719        |
| 08:00 AM                                                   | 1                   | 374  | 0    | 375        | 226                 | 6    | 232        | 3                             | 1    | 4          | 611        |
| Total Volume                                               | 1                   | 1889 | 0    | 1890       | 888                 | 15   | 903        | 5                             | 2    | 7          | 2800       |
| % App. Total                                               | 0.1                 | 99.9 | 0    |            | 98.3                | 1.7  |            | 71.4                          | 28.6 |            |            |
| PHF                                                        | .250                | .852 | .000 | .853       | .804                | .417 | .792       | .417                          | .500 | .438       | .926       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 12\_US 29 & Airport Acres Rd (S) PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 322  | 0    | 0    | 322        | 370              | 4    | 0    | 374        | 1                          | 0    | 0    | 1          | 697        |
| 04:15 PM    | 0                | 293  | 0    | 0    | 293        | 379              | 6    | 0    | 385        | 4                          | 0    | 0    | 4          | 682        |
| 04:30 PM    | 0                | 317  | 0    | 0    | 317        | 423              | 3    | 0    | 426        | 1                          | 0    | 0    | 1          | 744        |
| 04:45 PM    | 0                | 295  | 0    | 0    | 295        | 451              | 2    | 0    | 453        | 3                          | 0    | 0    | 3          | 751        |
| Total       | 0                | 1227 | 0    | 0    | 1227       | 1623             | 15   | 0    | 1638       | 9                          | 0    | 0    | 9          | 2874       |
| 05:00 PM    | 0                | 328  | 0    | 0    | 328        | 472              | 7    | 0    | 479        | 1                          | 1    | 0    | 2          | 809        |
| 05:15 PM    | 0                | 296  | 1    | 0    | 297        | 494              | 7    | 0    | 501        | 1                          | 0    | 0    | 1          | 799        |
| 05:30 PM    | 0                | 266  | 0    | 0    | 266        | 435              | 2    | 0    | 437        | 1                          | 1    | 0    | 2          | 705        |
| 05:45 PM    | 0                | 252  | 0    | 0    | 252        | 362              | 2    | 0    | 364        | 0                          | 0    | 0    | 0          | 616        |
| Total       | 0                | 1142 | 1    | 0    | 1143       | 1763             | 18   | 0    | 1781       | 3                          | 2    | 0    | 5          | 2929       |
| Grand Total | 0                | 2369 | 1    | 0    | 2370       | 3386             | 33   | 0    | 3419       | 12                         | 2    | 0    | 14         | 5803       |
| Apprch %    | 0                | 100  | 0    | 0    |            | 99               | 1    | 0    |            | 85.7                       | 14.3 | 0    |            |            |
| Total %     | 0                | 40.8 | 0    | 0    | 40.8       | 58.3             | 0.6  | 0    | 58.9       | 0.2                        | 0    | 0    | 0.2        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 04:30 PM                                                   | 0                   | 317  | 0    | 317        | 423                 | 3    | 426        | 1                             | 0    | 1          | 744        |
| 04:45 PM                                                   | 0                   | 295  | 0    | 295        | 451                 | 2    | 453        | 3                             | 0    | 3          | 751        |
| 05:00 PM                                                   | 0                   | 328  | 0    | 328        | 472                 | 7    | 479        | 1                             | 1    | 2          | 809        |
| 05:15 PM                                                   | 0                   | 296  | 1    | 297        | 494                 | 7    | 501        | 1                             | 0    | 1          | 799        |
| Total Volume                                               | 0                   | 1236 | 1    | 1237       | 1840                | 19   | 1859       | 6                             | 1    | 7          | 3103       |
| % App. Total                                               | 0                   | 99.9 | 0.1  |            | 99                  | 1    |            | 85.7                          | 14.3 |            |            |
| PHF                                                        | .000                | .942 | .250 | .943       | .931                | .679 | .928       | .500                          | .250 | .583       | .959       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 12\_US 29 & Airport Acres Rd (S) PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Trucks

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 15   | 0    | 0    | 15         | 12               | 0    | 0    | 12         | 0                          | 0    | 0    | 0          | 27         |
| 04:15 PM    | 0                | 14   | 0    | 0    | 14         | 16               | 0    | 0    | 16         | 0                          | 0    | 0    | 0          | 30         |
| 04:30 PM    | 0                | 23   | 0    | 0    | 23         | 17               | 0    | 0    | 17         | 1                          | 0    | 0    | 1          | 41         |
| 04:45 PM    | 0                | 12   | 0    | 0    | 12         | 17               | 0    | 0    | 17         | 0                          | 0    | 0    | 0          | 29         |
| Total       | 0                | 64   | 0    | 0    | 64         | 62               | 0    | 0    | 62         | 1                          | 0    | 0    | 1          | 127        |
| 05:00 PM    | 0                | 10   | 0    | 0    | 10         | 11               | 0    | 0    | 11         | 0                          | 0    | 0    | 0          | 21         |
| 05:15 PM    | 0                | 5    | 0    | 0    | 5          | 8                | 0    | 0    | 8          | 0                          | 0    | 0    | 0          | 13         |
| 05:30 PM    | 0                | 3    | 0    | 0    | 3          | 5                | 0    | 0    | 5          | 0                          | 0    | 0    | 0          | 8          |
| 05:45 PM    | 0                | 7    | 0    | 0    | 7          | 6                | 0    | 0    | 6          | 1                          | 0    | 0    | 1          | 14         |
| Total       | 0                | 25   | 0    | 0    | 25         | 30               | 0    | 0    | 30         | 1                          | 0    | 0    | 1          | 56         |
| Grand Total | 0                | 89   | 0    | 0    | 89         | 92               | 0    | 0    | 92         | 2                          | 0    | 0    | 2          | 183        |
| Apprch %    | 0                | 100  | 0    | 0    |            | 100              | 0    | 0    |            | 100                        | 0    | 0    |            |            |
| Total %     | 0                | 48.6 | 0    | 0    | 48.6       | 50.3             | 0    | 0    | 50.3       | 1.1                        | 0    | 0    | 1.1        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 04:00 PM                                                   | 0                   | 15   | 0    | 15         | 12                  | 0    | 12         | 0                             | 0    | 0          | 27         |
| 04:15 PM                                                   | 0                   | 14   | 0    | 14         | 16                  | 0    | 16         | 0                             | 0    | 0          | 30         |
| 04:30 PM                                                   | 0                   | 23   | 0    | 23         | 17                  | 0    | 17         | 1                             | 0    | 1          | 41         |
| 04:45 PM                                                   | 0                   | 12   | 0    | 12         | 17                  | 0    | 17         | 0                             | 0    | 0          | 29         |
| Total Volume                                               | 0                   | 64   | 0    | 64         | 62                  | 0    | 62         | 1                             | 0    | 1          | 127        |
| % App. Total                                               | 0                   | 100  | 0    |            | 100                 | 0    |            | 100                           | 0    |            |            |
| PHF                                                        | .000                | .696 | .000 | .696       | .912                | .000 | .912       | .250                          | .000 | .250       | .774       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 12\_US 29 & Airport Acres Rd (S) PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

| Start Time  | US 29 Southbound |      |      |      |            | US 29 Northbound |      |      |            | Airport Acres Rd Eastbound |      |      |            | Int. Total |
|-------------|------------------|------|------|------|------------|------------------|------|------|------------|----------------------------|------|------|------------|------------|
|             | Right            | Thru | Left | Peds | App. Total | Thru             | Left | Peds | App. Total | Right                      | Left | Peds | App. Total |            |
| 04:00 PM    | 0                | 337  | 0    | 0    | 337        | 382              | 4    | 0    | 386        | 1                          | 0    | 0    | 1          | 724        |
| 04:15 PM    | 0                | 307  | 0    | 0    | 307        | 395              | 6    | 0    | 401        | 4                          | 0    | 0    | 4          | 712        |
| 04:30 PM    | 0                | 340  | 0    | 0    | 340        | 440              | 3    | 0    | 443        | 2                          | 0    | 0    | 2          | 785        |
| 04:45 PM    | 0                | 307  | 0    | 0    | 307        | 468              | 2    | 0    | 470        | 3                          | 0    | 0    | 3          | 780        |
| Total       | 0                | 1291 | 0    | 0    | 1291       | 1685             | 15   | 0    | 1700       | 10                         | 0    | 0    | 10         | 3001       |
| 05:00 PM    | 0                | 338  | 0    | 0    | 338        | 483              | 7    | 0    | 490        | 1                          | 1    | 0    | 2          | 830        |
| 05:15 PM    | 0                | 301  | 1    | 0    | 302        | 502              | 7    | 0    | 509        | 1                          | 0    | 0    | 1          | 812        |
| 05:30 PM    | 0                | 269  | 0    | 0    | 269        | 440              | 2    | 0    | 442        | 1                          | 1    | 0    | 2          | 713        |
| 05:45 PM    | 0                | 259  | 0    | 0    | 259        | 368              | 2    | 0    | 370        | 1                          | 0    | 0    | 1          | 630        |
| Total       | 0                | 1167 | 1    | 0    | 1168       | 1793             | 18   | 0    | 1811       | 4                          | 2    | 0    | 6          | 2985       |
| Grand Total | 0                | 2458 | 1    | 0    | 2459       | 3478             | 33   | 0    | 3511       | 14                         | 2    | 0    | 16         | 5986       |
| Apprch %    | 0                | 100  | 0    | 0    |            | 99.1             | 0.9  | 0    |            | 87.5                       | 12.5 | 0    |            |            |
| Total %     | 0                | 41.1 | 0    | 0    | 41.1       | 58.1             | 0.6  | 0    | 58.7       | 0.2                        | 0    | 0    | 0.3        |            |

|                                                            | US 29<br>Southbound |      |      |            | US 29<br>Northbound |      |            | Airport Acres Rd<br>Eastbound |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|---------------------|------|------------|-------------------------------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Thru                | Left | App. Total | Right                         | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                     |      |            |                               |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |      |      |            |                     |      |            |                               |      |            |            |
| 04:30 PM                                                   | 0                   | 340  | 0    | 340        | 440                 | 3    | 443        | 2                             | 0    | 2          | 785        |
| 04:45 PM                                                   | 0                   | 307  | 0    | 307        | 468                 | 2    | 470        | 3                             | 0    | 3          | 780        |
| 05:00 PM                                                   | 0                   | 338  | 0    | 338        | 483                 | 7    | 490        | 1                             | 1    | 2          | 830        |
| 05:15 PM                                                   | 0                   | 301  | 1    | 302        | 502                 | 7    | 509        | 1                             | 0    | 1          | 812        |
| Total Volume                                               | 0                   | 1286 | 1    | 1287       | 1893                | 19   | 1912       | 7                             | 1    | 8          | 3207       |
| % App. Total                                               | 0                   | 99.9 | 0.1  |            | 99                  | 1    |            | 87.5                          | 12.5 |            |            |
| PHF                                                        | .000                | .946 | .250 | .946       | .943                | .679 | .939       | .583                          | .250 | .667       | .966       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 13\_US 29 & Airport Rd AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Proffit Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Airport Rd<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 14                  | 316  | 26   | 0    | 356        | 17                      | 7    | 17   | 0    | 41         | 24                  | 131  | 22   | 1    | 178        | 7                       | 4    | 8    | 0    | 19         | 594        |
| 07:15 AM    | 17                  | 402  | 52   | 0    | 471        | 14                      | 9    | 17   | 0    | 40         | 22                  | 145  | 21   | 1    | 189        | 15                      | 10   | 13   | 0    | 38         | 738        |
| 07:30 AM    | 16                  | 446  | 63   | 0    | 525        | 20                      | 12   | 18   | 0    | 50         | 31                  | 138  | 29   | 0    | 198        | 15                      | 18   | 19   | 0    | 52         | 825        |
| 07:45 AM    | 28                  | 365  | 49   | 0    | 442        | 41                      | 19   | 33   | 0    | 93         | 23                  | 183  | 44   | 0    | 250        | 20                      | 19   | 29   | 0    | 68         | 853        |
| Total       | 75                  | 1529 | 190  | 0    | 1794       | 92                      | 47   | 85   | 0    | 224        | 100                 | 597  | 116  | 2    | 815        | 57                      | 51   | 69   | 0    | 177        | 3010       |
| 08:00 AM    | 18                  | 323  | 38   | 0    | 379        | 28                      | 19   | 28   | 0    | 75         | 21                  | 176  | 39   | 0    | 236        | 15                      | 12   | 19   | 0    | 46         | 736        |
| 08:15 AM    | 24                  | 333  | 36   | 0    | 393        | 24                      | 12   | 24   | 0    | 60         | 23                  | 183  | 36   | 0    | 242        | 19                      | 8    | 21   | 0    | 48         | 743        |
| 08:30 AM    | 24                  | 306  | 37   | 0    | 367        | 22                      | 15   | 25   | 0    | 62         | 13                  | 165  | 27   | 0    | 205        | 12                      | 4    | 23   | 0    | 39         | 673        |
| 08:45 AM    | 36                  | 289  | 30   | 0    | 355        | 23                      | 10   | 20   | 0    | 53         | 11                  | 194  | 28   | 0    | 233        | 12                      | 11   | 22   | 0    | 45         | 686        |
| Total       | 102                 | 1251 | 141  | 0    | 1494       | 97                      | 56   | 97   | 0    | 250        | 68                  | 718  | 130  | 0    | 916        | 58                      | 35   | 85   | 0    | 178        | 2838       |
| Grand Total | 177                 | 2780 | 331  | 0    | 3288       | 189                     | 103  | 182  | 0    | 474        | 168                 | 1315 | 246  | 2    | 1731       | 115                     | 86   | 154  | 0    | 355        | 5848       |
| Apprch %    | 5.4                 | 84.5 | 10.1 | 0    |            | 39.9                    | 21.7 | 38.4 | 0    |            | 9.7                 | 76   | 14.2 | 0.1  |            | 32.4                    | 24.2 | 43.4 | 0    |            |            |
| Total %     | 3                   | 47.5 | 5.7  | 0    | 56.2       | 3.2                     | 1.8  | 3.1  | 0    | 8.1        | 2.9                 | 22.5 | 4.2  | 0    | 29.6       | 2                       | 1.5  | 2.6  | 0    | 6.1        |            |

|                                                            | US 29<br>Southbound |            |           |            | Proffit Rd<br>Westbound |           |           |            | US 29<br>Northbound |            |           |            | Airport Rd<br>Eastbound |           |           |            |            |
|------------------------------------------------------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:30 AM       |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |            |
| 07:30 AM                                                   | 16                  | <b>446</b> | <b>63</b> | <b>525</b> | 20                      | 12        | 18        | 50         | <b>31</b>           | 138        | 29        | 198        | 15                      | 18        | 19        | 52         | 825        |
| 07:45 AM                                                   | <b>28</b>           | 365        | 49        | 442        | <b>41</b>               | <b>19</b> | <b>33</b> | <b>93</b>  | 23                  | <b>183</b> | <b>44</b> | <b>250</b> | <b>20</b>               | <b>19</b> | <b>29</b> | <b>68</b>  | <b>853</b> |
| 08:00 AM                                                   | 18                  | 323        | 38        | 379        | 28                      | 19        | 28        | 75         | 21                  | 176        | 39        | 236        | 15                      | 12        | 19        | 46         | 736        |
| 08:15 AM                                                   | 24                  | 333        | 36        | 393        | 24                      | 12        | 24        | 60         | 23                  | 183        | 36        | 242        | 19                      | 8         | 21        | 48         | 743        |
| Total Volume                                               | 86                  | 1467       | 186       | 1739       | 113                     | 62        | 103       | 278        | 98                  | 680        | 148       | 926        | 69                      | 57        | 88        | 214        | 3157       |
| % App. Total                                               | 4.9                 | 84.4       | 10.7      |            | 40.6                    | 22.3      | 37.1      |            | 10.6                | 73.4       | 16        |            | 32.2                    | 26.6      | 41.1      |            |            |
| PHF                                                        | .768                | .822       | .738      | .828       | .689                    | .816      | .780      | .747       | .790                | .929       | .841      | .926       | .863                    | .750      | .759      | .787       | .925       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 13\_US 29 & Airport Rd AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Proffit Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Airport Rd<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 1                   | 18   | 0    | 0    | 19         | 2                       | 1    | 1    | 0    | 4          | 0                   | 13   | 2    | 0    | 15         | 0                       | 0    | 1    | 0    | 1          | 39         |
| 07:15 AM    | 2                   | 20   | 0    | 0    | 22         | 4                       | 1    | 1    | 0    | 6          | 0                   | 13   | 2    | 0    | 15         | 1                       | 1    | 1    | 0    | 3          | 46         |
| 07:30 AM    | 2                   | 17   | 6    | 0    | 25         | 0                       | 0    | 0    | 0    | 0          | 3                   | 15   | 1    | 0    | 19         | 3                       | 1    | 0    | 0    | 4          | 48         |
| 07:45 AM    | 2                   | 13   | 0    | 0    | 15         | 0                       | 0    | 1    | 0    | 1          | 1                   | 10   | 2    | 0    | 13         | 1                       | 0    | 0    | 0    | 1          | 30         |
| Total       | 7                   | 68   | 6    | 0    | 81         | 6                       | 2    | 3    | 0    | 11         | 4                   | 51   | 7    | 0    | 62         | 5                       | 2    | 2    | 0    | 9          | 163        |
| 08:00 AM    | 2                   | 14   | 2    | 0    | 18         | 1                       | 0    | 1    | 0    | 2          | 2                   | 10   | 0    | 0    | 12         | 4                       | 1    | 0    | 0    | 5          | 37         |
| 08:15 AM    | 1                   | 16   | 0    | 0    | 17         | 3                       | 0    | 0    | 0    | 3          | 0                   | 20   | 0    | 0    | 20         | 1                       | 0    | 2    | 0    | 3          | 43         |
| 08:30 AM    | 2                   | 18   | 2    | 0    | 22         | 6                       | 1    | 0    | 0    | 7          | 0                   | 17   | 3    | 0    | 20         | 2                       | 0    | 0    | 0    | 2          | 51         |
| 08:45 AM    | 2                   | 15   | 0    | 0    | 17         | 1                       | 0    | 1    | 0    | 2          | 2                   | 16   | 2    | 0    | 20         | 5                       | 0    | 0    | 0    | 5          | 44         |
| Total       | 7                   | 63   | 4    | 0    | 74         | 11                      | 1    | 2    | 0    | 14         | 4                   | 63   | 5    | 0    | 72         | 12                      | 1    | 2    | 0    | 15         | 175        |
| Grand Total | 14                  | 131  | 10   | 0    | 155        | 17                      | 3    | 5    | 0    | 25         | 8                   | 114  | 12   | 0    | 134        | 17                      | 3    | 4    | 0    | 24         | 338        |
| Apprch %    | 9                   | 84.5 | 6.5  | 0    |            | 68                      | 12   | 20   | 0    |            | 6                   | 85.1 | 9    | 0    |            | 70.8                    | 12.5 | 16.7 | 0    |            |            |
| Total %     | 4.1                 | 38.8 | 3    | 0    | 45.9       | 5                       | 0.9  | 1.5  | 0    | 7.4        | 2.4                 | 33.7 | 3.6  | 0    | 39.6       | 5                       | 0.9  | 1.2  | 0    | 7.1        |            |

|                                                            | US 29<br>Southbound |      |      |            | Proffit Rd<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Airport Rd<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |      |      |            |                         |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 08:00 AM       |                     |      |      |            |                         |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 08:00 AM                                                   | 2                   | 14   | 2    | 18         | 1                       | 0    | 1    | 2          | 2                   | 10   | 0    | 12         | 4                       | 1    | 0    | 5          | 37         |
| 08:15 AM                                                   | 1                   | 16   | 0    | 17         | 3                       | 0    | 0    | 3          | 0                   | 20   | 0    | 20         | 1                       | 0    | 2    | 3          | 43         |
| 08:30 AM                                                   | 2                   | 18   | 2    | 22         | 6                       | 1    | 0    | 7          | 0                   | 17   | 3    | 20         | 2                       | 0    | 0    | 2          | 51         |
| 08:45 AM                                                   | 2                   | 15   | 0    | 17         | 1                       | 0    | 1    | 2          | 2                   | 16   | 2    | 20         | 5                       | 0    | 0    | 5          | 44         |
| Total Volume                                               | 7                   | 63   | 4    | 74         | 11                      | 1    | 2    | 14         | 4                   | 63   | 5    | 72         | 12                      | 1    | 2    | 15         | 175        |
| % App. Total                                               | 9.5                 | 85.1 | 5.4  |            | 78.6                    | 7.1  | 14.3 |            | 5.6                 | 87.5 | 6.9  |            | 80                      | 6.7  | 13.3 |            |            |
| PHF                                                        | .875                | .875 | .500 | .841       | .458                    | .250 | .500 | .500       | .500                | .788 | .417 | .900       | .600                    | .250 | .250 | .750       | .858       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 13\_US 29 & Airport Rd AM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Proffit Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Airport Rd<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM    | 15                  | 334  | 26   | 0    | 375        | 19                      | 8    | 18   | 0    | 45         | 24                  | 144  | 24   | 1    | 193        | 7                       | 4    | 9    | 0    | 20         | 633        |
| 07:15 AM    | 19                  | 422  | 52   | 0    | 493        | 18                      | 10   | 18   | 0    | 46         | 22                  | 158  | 23   | 1    | 204        | 16                      | 11   | 14   | 0    | 41         | 784        |
| 07:30 AM    | 18                  | 463  | 69   | 0    | 550        | 20                      | 12   | 18   | 0    | 50         | 34                  | 153  | 30   | 0    | 217        | 18                      | 19   | 19   | 0    | 56         | 873        |
| 07:45 AM    | 30                  | 378  | 49   | 0    | 457        | 41                      | 19   | 34   | 0    | 94         | 24                  | 193  | 46   | 0    | 263        | 21                      | 19   | 29   | 0    | 69         | 883        |
| Total       | 82                  | 1597 | 196  | 0    | 1875       | 98                      | 49   | 88   | 0    | 235        | 104                 | 648  | 123  | 2    | 877        | 62                      | 53   | 71   | 0    | 186        | 3173       |
| 08:00 AM    | 20                  | 337  | 40   | 0    | 397        | 29                      | 19   | 29   | 0    | 77         | 23                  | 186  | 39   | 0    | 248        | 19                      | 13   | 19   | 0    | 51         | 773        |
| 08:15 AM    | 25                  | 349  | 36   | 0    | 410        | 27                      | 12   | 24   | 0    | 63         | 23                  | 203  | 36   | 0    | 262        | 20                      | 8    | 23   | 0    | 51         | 786        |
| 08:30 AM    | 26                  | 324  | 39   | 0    | 389        | 28                      | 16   | 25   | 0    | 69         | 13                  | 182  | 30   | 0    | 225        | 14                      | 4    | 23   | 0    | 41         | 724        |
| 08:45 AM    | 38                  | 304  | 30   | 0    | 372        | 24                      | 10   | 21   | 0    | 55         | 13                  | 210  | 30   | 0    | 253        | 17                      | 11   | 22   | 0    | 50         | 730        |
| Total       | 109                 | 1314 | 145  | 0    | 1568       | 108                     | 57   | 99   | 0    | 264        | 72                  | 781  | 135  | 0    | 988        | 70                      | 36   | 87   | 0    | 193        | 3013       |
| Grand Total | 191                 | 2911 | 341  | 0    | 3443       | 206                     | 106  | 187  | 0    | 499        | 176                 | 1429 | 258  | 2    | 1865       | 132                     | 89   | 158  | 0    | 379        | 6186       |
| Apprch %    | 5.5                 | 84.5 | 9.9  | 0    |            | 41.3                    | 21.2 | 37.5 | 0    |            | 9.4                 | 76.6 | 13.8 | 0.1  |            | 34.8                    | 23.5 | 41.7 | 0    |            |            |
| Total %     | 3.1                 | 47.1 | 5.5  | 0    | 55.7       | 3.3                     | 1.7  | 3    | 0    | 8.1        | 2.8                 | 23.1 | 4.2  | 0    | 30.1       | 2.1                     | 1.4  | 2.6  | 0    | 6.1        |            |

|                                                            | US 29<br>Southbound |            |           |            | Proffit Rd<br>Westbound |           |           |            | US 29<br>Northbound |            |           |            | Airport Rd<br>Eastbound |           |           |            |            |
|------------------------------------------------------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:30 AM       |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |            |
| 07:30 AM                                                   | 18                  | <b>463</b> | <b>69</b> | <b>550</b> | 20                      | 12        | 18        | 50         | <b>34</b>           | 153        | 30        | 217        | 18                      | <b>19</b> | 19        | 56         | 873        |
| 07:45 AM                                                   | <b>30</b>           | 378        | 49        | 457        | <b>41</b>               | <b>19</b> | <b>34</b> | <b>94</b>  | 24                  | 193        | <b>46</b> | <b>263</b> | <b>21</b>               | 19        | <b>29</b> | <b>69</b>  | <b>883</b> |
| 08:00 AM                                                   | 20                  | 337        | 40        | 397        | 29                      | 19        | 29        | 77         | 23                  | 186        | 39        | 248        | 19                      | 13        | 19        | 51         | 773        |
| 08:15 AM                                                   | 25                  | 349        | 36        | 410        | 27                      | 12        | 24        | 63         | 23                  | <b>203</b> | 36        | 262        | 20                      | 8         | 23        | 51         | 786        |
| Total Volume                                               | 93                  | 1527       | 194       | 1814       | 117                     | 62        | 105       | 284        | 104                 | 735        | 151       | 990        | 78                      | 59        | 90        | 227        | 3315       |
| % App. Total                                               | 5.1                 | 84.2       | 10.7      |            | 41.2                    | 21.8      | 37        |            | 10.5                | 74.2       | 15.3      |            | 34.4                    | 26        | 39.6      |            |            |
| PHF                                                        | .775                | .825       | .703      | .825       | .713                    | .816      | .772      | .755       | .765                | .905       | .821      | .941       | .929                    | .776      | .776      | .822       | .939       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 13\_US 29 & Airport Rd PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Cars

|             | US 29<br>Southbound |      |      |      |            | Proffit Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Airport Rd<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 21                  | 261  | 30   | 0    | 312        | 17                      | 12   | 41   | 0    | 70         | 25                  | 341  | 15   | 0    | 381        | 28                      | 16   | 20   | 0    | 64         | 827        |
| 04:15 PM    | 22                  | 266  | 33   | 0    | 321        | 44                      | 9    | 22   | 0    | 75         | 30                  | 337  | 20   | 0    | 387        | 22                      | 12   | 18   | 0    | 52         | 835        |
| 04:30 PM    | 15                  | 258  | 36   | 0    | 309        | 19                      | 14   | 25   | 0    | 58         | 27                  | 368  | 17   | 0    | 412        | 28                      | 23   | 27   | 0    | 78         | 857        |
| 04:45 PM    | 21                  | 265  | 39   | 0    | 325        | 36                      | 22   | 37   | 0    | 95         | 38                  | 392  | 26   | 0    | 456        | 25                      | 15   | 23   | 0    | 63         | 939        |
| Total       | 79                  | 1050 | 138  | 0    | 1267       | 116                     | 57   | 125  | 0    | 298        | 120                 | 1438 | 78   | 0    | 1636       | 103                     | 66   | 88   | 0    | 257        | 3458       |
| 05:00 PM    | 17                  | 257  | 37   | 0    | 311        | 39                      | 8    | 23   | 0    | 70         | 39                  | 411  | 23   | 0    | 473        | 51                      | 30   | 35   | 0    | 116        | 970        |
| 05:15 PM    | 27                  | 256  | 35   | 0    | 318        | 42                      | 21   | 22   | 0    | 85         | 40                  | 438  | 17   | 0    | 495        | 47                      | 12   | 31   | 0    | 90         | 988        |
| 05:30 PM    | 22                  | 223  | 33   | 0    | 278        | 43                      | 15   | 21   | 0    | 79         | 46                  | 375  | 19   | 0    | 440        | 20                      | 10   | 22   | 0    | 52         | 849        |
| 05:45 PM    | 13                  | 218  | 30   | 0    | 261        | 34                      | 14   | 14   | 0    | 62         | 29                  | 314  | 25   | 0    | 368        | 19                      | 11   | 26   | 0    | 56         | 747        |
| Total       | 79                  | 954  | 135  | 0    | 1168       | 158                     | 58   | 80   | 0    | 296        | 154                 | 1538 | 84   | 0    | 1776       | 137                     | 63   | 114  | 0    | 314        | 3554       |
| Grand Total | 158                 | 2004 | 273  | 0    | 2435       | 274                     | 115  | 205  | 0    | 594        | 274                 | 2976 | 162  | 0    | 3412       | 240                     | 129  | 202  | 0    | 571        | 7012       |
| Apprch %    | 6.5                 | 82.3 | 11.2 | 0    |            | 46.1                    | 19.4 | 34.5 | 0    |            | 8                   | 87.2 | 4.7  | 0    |            | 42                      | 22.6 | 35.4 | 0    |            |            |
| Total %     | 2.3                 | 28.6 | 3.9  | 0    | 34.7       | 3.9                     | 1.6  | 2.9  | 0    | 8.5        | 3.9                 | 42.4 | 2.3  | 0    | 48.7       | 3.4                     | 1.8  | 2.9  | 0    | 8.1        |            |

|                                                            | US 29<br>Southbound |            |           |            | Proffit Rd<br>Westbound |           |           |            | US 29<br>Northbound |            |           |            | Airport Rd<br>Eastbound |           |           |            |            |
|------------------------------------------------------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|------------|
| Start Time                                                 | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |            |
| 04:30 PM                                                   | 15                  | 258        | 36        | 309        | 19                      | 14        | 25        | 58         | 27                  | 368        | 17        | 412        | 28                      | 23        | 27        | 78         | 857        |
| 04:45 PM                                                   | 21                  | <b>265</b> | <b>39</b> | <b>325</b> | 36                      | <b>22</b> | <b>37</b> | <b>95</b>  | 38                  | 392        | <b>26</b> | 456        | 25                      | 15        | 23        | 63         | 939        |
| 05:00 PM                                                   | 17                  | 257        | 37        | 311        | 39                      | 8         | 23        | 70         | 39                  | 411        | 23        | 473        | <b>51</b>               | <b>30</b> | <b>35</b> | <b>116</b> | 970        |
| 05:15 PM                                                   | <b>27</b>           | 256        | 35        | 318        | <b>42</b>               | 21        | 22        | 85         | <b>40</b>           | <b>438</b> | 17        | <b>495</b> | 47                      | 12        | 31        | 90         | <b>988</b> |
| Total Volume                                               | 80                  | 1036       | 147       | 1263       | 136                     | 65        | 107       | 308        | 144                 | 1609       | 83        | 1836       | 151                     | 80        | 116       | 347        | 3754       |
| % App. Total                                               | 6.3                 | 82         | 11.6      |            | 44.2                    | 21.1      | 34.7      |            | 7.8                 | 87.6       | 4.5       |            | 43.5                    | 23.1      | 33.4      |            |            |
| PHF                                                        | .741                | .977       | .942      | .972       | .810                    | .739      | .723      | .811       | .900                | .918       | .798      | .927       | .740                    | .667      | .829      | .748       | .950       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 13\_US 29 & Airport Rd PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Trucks

|             | US 29<br>Southbound |      |      |      |            | Proffit Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Airport Rd<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 2                   | 14   | 0    | 0    | 16         | 1                       | 0    | 0    | 0    | 1          | 0                   | 9    | 0    | 0    | 9          | 2                       | 0    | 0    | 0    | 2          | 28         |
| 04:15 PM    | 0                   | 14   | 0    | 0    | 14         | 1                       | 1    | 0    | 0    | 2          | 0                   | 15   | 3    | 0    | 18         | 1                       | 0    | 0    | 0    | 1          | 35         |
| 04:30 PM    | 1                   | 20   | 2    | 0    | 23         | 0                       | 0    | 1    | 0    | 1          | 1                   | 16   | 1    | 0    | 18         | 1                       | 0    | 1    | 0    | 2          | 44         |
| 04:45 PM    | 0                   | 10   | 2    | 0    | 12         | 0                       | 2    | 2    | 0    | 4          | 1                   | 17   | 1    | 0    | 19         | 1                       | 0    | 0    | 0    | 1          | 36         |
| Total       | 3                   | 58   | 4    | 0    | 65         | 2                       | 3    | 3    | 0    | 8          | 2                   | 57   | 5    | 0    | 64         | 5                       | 0    | 1    | 0    | 6          | 143        |
| 05:00 PM    | 3                   | 6    | 3    | 0    | 12         | 0                       | 0    | 0    | 0    | 0          | 2                   | 11   | 0    | 0    | 13         | 0                       | 1    | 0    | 0    | 1          | 26         |
| 05:15 PM    | 1                   | 4    | 0    | 0    | 5          | 0                       | 0    | 2    | 0    | 2          | 0                   | 8    | 0    | 0    | 8          | 1                       | 2    | 0    | 0    | 3          | 18         |
| 05:30 PM    | 0                   | 3    | 0    | 0    | 3          | 1                       | 1    | 2    | 0    | 4          | 0                   | 4    | 1    | 0    | 5          | 0                       | 0    | 0    | 0    | 0          | 12         |
| 05:45 PM    | 1                   | 7    | 0    | 0    | 8          | 0                       | 0    | 0    | 0    | 0          | 1                   | 6    | 0    | 0    | 7          | 1                       | 0    | 0    | 0    | 1          | 16         |
| Total       | 5                   | 20   | 3    | 0    | 28         | 1                       | 1    | 4    | 0    | 6          | 3                   | 29   | 1    | 0    | 33         | 2                       | 3    | 0    | 0    | 5          | 72         |
| Grand Total | 8                   | 78   | 7    | 0    | 93         | 3                       | 4    | 7    | 0    | 14         | 5                   | 86   | 6    | 0    | 97         | 7                       | 3    | 1    | 0    | 11         | 215        |
| Apprch %    | 8.6                 | 83.9 | 7.5  | 0    |            | 21.4                    | 28.6 | 50   | 0    |            | 5.2                 | 88.7 | 6.2  | 0    |            | 63.6                    | 27.3 | 9.1  | 0    |            |            |
| Total %     | 3.7                 | 36.3 | 3.3  | 0    | 43.3       | 1.4                     | 1.9  | 3.3  | 0    | 6.5        | 2.3                 | 40   | 2.8  | 0    | 45.1       | 3.3                     | 1.4  | 0.5  | 0    | 5.1        |            |

|                                                            | US 29<br>Southbound |      |      |            | Proffit Rd<br>Westbound |      |      |            | US 29<br>Northbound |      |      |            | Airport Rd<br>Eastbound |      |      |            |            |
|------------------------------------------------------------|---------------------|------|------|------------|-------------------------|------|------|------------|---------------------|------|------|------------|-------------------------|------|------|------------|------------|
| Start Time                                                 | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Right               | Thru | Left | App. Total | Right                   | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |      |      |            |                         |      |      |            |                     |      |      |            |                         |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:00 PM       |                     |      |      |            |                         |      |      |            |                     |      |      |            |                         |      |      |            |            |
| 04:00 PM                                                   | 2                   | 14   | 0    | 16         | 1                       | 0    | 0    | 1          | 0                   | 9    | 0    | 9          | 2                       | 0    | 0    | 2          | 28         |
| 04:15 PM                                                   | 0                   | 14   | 0    | 14         | 1                       | 1    | 0    | 2          | 0                   | 15   | 3    | 18         | 1                       | 0    | 0    | 1          | 35         |
| 04:30 PM                                                   | 1                   | 20   | 2    | 23         | 0                       | 0    | 1    | 1          | 1                   | 16   | 1    | 18         | 1                       | 0    | 1    | 2          | 44         |
| 04:45 PM                                                   | 0                   | 10   | 2    | 12         | 0                       | 2    | 2    | 4          | 1                   | 17   | 1    | 19         | 1                       | 0    | 0    | 1          | 36         |
| Total Volume                                               | 3                   | 58   | 4    | 65         | 2                       | 3    | 3    | 8          | 2                   | 57   | 5    | 64         | 5                       | 0    | 1    | 6          | 143        |
| % App. Total                                               | 4.6                 | 89.2 | 6.2  |            | 2.5                     | 37.5 | 37.5 |            | 3.1                 | 89.1 | 7.8  |            | 83.3                    | 0    | 16.7 |            |            |
| PHF                                                        | .375                | .725 | .500 | .707       | .500                    | .375 | .375 | .500       | .500                | .838 | .417 | .842       | .625                    | .000 | .250 | .750       | .813       |

# Peggy Malone & Associates

## (888) 247-8602

File Name : 13\_US 29 & Airport Rd PM  
 Site Code :  
 Start Date : 4/13/2021  
 Page No : 1

### Groups Printed- Combined

|             | US 29<br>Southbound |      |      |      |            | Proffit Rd<br>Westbound |      |      |      |            | US 29<br>Northbound |      |      |      |            | Airport Rd<br>Eastbound |      |      |      |            |            |
|-------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|---------------------|------|------|------|------------|-------------------------|------|------|------|------------|------------|
| Start Time  | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Right               | Thru | Left | Peds | App. Total | Right                   | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM    | 23                  | 275  | 30   | 0    | 328        | 18                      | 12   | 41   | 0    | 71         | 25                  | 350  | 15   | 0    | 390        | 30                      | 16   | 20   | 0    | 66         | 855        |
| 04:15 PM    | 22                  | 280  | 33   | 0    | 335        | 45                      | 10   | 22   | 0    | 77         | 30                  | 352  | 23   | 0    | 405        | 23                      | 12   | 18   | 0    | 53         | 870        |
| 04:30 PM    | 16                  | 278  | 38   | 0    | 332        | 19                      | 14   | 26   | 0    | 59         | 28                  | 384  | 18   | 0    | 430        | 29                      | 23   | 28   | 0    | 80         | 901        |
| 04:45 PM    | 21                  | 275  | 41   | 0    | 337        | 36                      | 24   | 39   | 0    | 99         | 39                  | 409  | 27   | 0    | 475        | 26                      | 15   | 23   | 0    | 64         | 975        |
| Total       | 82                  | 1108 | 142  | 0    | 1332       | 118                     | 60   | 128  | 0    | 306        | 122                 | 1495 | 83   | 0    | 1700       | 108                     | 66   | 89   | 0    | 263        | 3601       |
| 05:00 PM    | 20                  | 263  | 40   | 0    | 323        | 39                      | 8    | 23   | 0    | 70         | 41                  | 422  | 23   | 0    | 486        | 51                      | 31   | 35   | 0    | 117        | 996        |
| 05:15 PM    | 28                  | 260  | 35   | 0    | 323        | 42                      | 21   | 24   | 0    | 87         | 40                  | 446  | 17   | 0    | 503        | 48                      | 14   | 31   | 0    | 93         | 1006       |
| 05:30 PM    | 22                  | 226  | 33   | 0    | 281        | 44                      | 16   | 23   | 0    | 83         | 46                  | 379  | 20   | 0    | 445        | 20                      | 10   | 22   | 0    | 52         | 861        |
| 05:45 PM    | 14                  | 225  | 30   | 0    | 269        | 34                      | 14   | 14   | 0    | 62         | 30                  | 320  | 25   | 0    | 375        | 20                      | 11   | 26   | 0    | 57         | 763        |
| Total       | 84                  | 974  | 138  | 0    | 1196       | 159                     | 59   | 84   | 0    | 302        | 157                 | 1567 | 85   | 0    | 1809       | 139                     | 66   | 114  | 0    | 319        | 3626       |
| Grand Total | 166                 | 2082 | 280  | 0    | 2528       | 277                     | 119  | 212  | 0    | 608        | 279                 | 3062 | 168  | 0    | 3509       | 247                     | 132  | 203  | 0    | 582        | 7227       |
| Apprch %    | 6.6                 | 82.4 | 11.1 | 0    |            | 45.6                    | 19.6 | 34.9 | 0    |            | 8                   | 87.3 | 4.8  | 0    |            | 42.4                    | 22.7 | 34.9 | 0    |            |            |
| Total %     | 2.3                 | 28.8 | 3.9  | 0    | 35         | 3.8                     | 1.6  | 2.9  | 0    | 8.4        | 3.9                 | 42.4 | 2.3  | 0    | 48.6       | 3.4                     | 1.8  | 2.8  | 0    | 8.1        |            |

|                                                            | US 29<br>Southbound |            |           |            | Proffit Rd<br>Westbound |           |           |            | US 29<br>Northbound |            |           |            | Airport Rd<br>Eastbound |           |           |            |             |
|------------------------------------------------------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|---------------------|------------|-----------|------------|-------------------------|-----------|-----------|------------|-------------|
| Start Time                                                 | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Right               | Thru       | Left      | App. Total | Right                   | Thru      | Left      | App. Total | Int. Total  |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |             |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                     |            |           |            |                         |           |           |            |                     |            |           |            |                         |           |           |            |             |
| 04:30 PM                                                   | 16                  | <b>278</b> | 38        | 332        | 19                      | 14        | 26        | 59         | 28                  | 384        | 18        | 430        | 29                      | 23        | 28        | 80         | 901         |
| 04:45 PM                                                   | 21                  | 275        | <b>41</b> | <b>337</b> | 36                      | <b>24</b> | <b>39</b> | <b>99</b>  | 39                  | 409        | <b>27</b> | 475        | 26                      | 15        | 23        | 64         | 975         |
| 05:00 PM                                                   | 20                  | 263        | 40        | 323        | 39                      | 8         | 23        | 70         | <b>41</b>           | 422        | 23        | 486        | <b>51</b>               | <b>31</b> | <b>35</b> | <b>117</b> | 996         |
| 05:15 PM                                                   | <b>28</b>           | 260        | 35        | 323        | <b>42</b>               | 21        | 24        | 87         | 40                  | <b>446</b> | 17        | <b>503</b> | 48                      | 14        | 31        | 93         | <b>1006</b> |
| Total Volume                                               | 85                  | 1076       | 154       | 1315       | 136                     | 67        | 112       | 315        | 148                 | 1661       | 85        | 1894       | 154                     | 83        | 117       | 354        | 3878        |
| % App. Total                                               | 6.5                 | 81.8       | 11.7      |            | 43.2                    | 21.3      | 35.6      |            | 7.8                 | 87.7       | 4.5       |            | 43.5                    | 23.4      | 33.1      |            |             |
| PHF                                                        | .759                | .968       | .939      | .976       | .810                    | .698      | .718      | .795       | .902                | .931       | .787      | .941       | .755                    | .669      | .836      | .756       | .964        |

**Attachment B** Existing  
Traffic  
Conditions  
Analysis

# HCM Unsignalized Intersection Capacity Analysis

## 1: US 29 & Deerfield Drive

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 11                                                                                | 1                                                                                 | 27                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 13                                                                                  | 749                                                                                 | 0                                                                                   | 0                                                                                   | 1306                                                                                | 18                                                                                  |
| Future Volume (Veh/h)             | 11                                                                                | 1                                                                                 | 27                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 13                                                                                  | 749                                                                                 | 0                                                                                   | 0                                                                                   | 1306                                                                                | 18                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                |
| Hourly flow rate (vph)            | 12                                                                                | 1                                                                                 | 30                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 14                                                                                  | 832                                                                                 | 0                                                                                   | 0                                                                                   | 1451                                                                                | 20                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.86                                                                              | 0.86                                                                              |                                                                                   | 0.86                                                                              | 0.86                                                                              | 0.86                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.86                                                                                |                                                                                     |                                                                                     |
| vC, conflicting volume            | 1895                                                                              | 2311                                                                              | 726                                                                               | 1586                                                                              | 2331                                                                              | 416                                                                               | 1471                                                                                |                                                                                     |                                                                                     | 832                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 1451                                                                              | 1451                                                                              |                                                                                   | 860                                                                               | 860                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 444                                                                               | 860                                                                               |                                                                                   | 726                                                                               | 1471                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1720                                                                              | 2202                                                                              | 726                                                                               | 1362                                                                              | 2225                                                                              | 7                                                                                 | 1471                                                                                |                                                                                     |                                                                                     | 489                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.1                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.3                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.3                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 91                                                                                | 99                                                                                | 91                                                                                | 100                                                                               | 100                                                                               | 100                                                                               | 97                                                                                  |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 135                                                                               | 177                                                                               | 348                                                                               | 270                                                                               | 163                                                                               | 933                                                                               | 426                                                                                 |                                                                                     |                                                                                     | 937                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 43                                                                                | 1                                                                                 | 14                                                                                | 416                                                                               | 416                                                                               | 0                                                                                 | 0                                                                                   | 726                                                                                 | 726                                                                                 | 20                                                                                  |                                                                                     |                                                                                     |
| Volume Left                       | 12                                                                                | 1                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 30                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 20                                                                                  |                                                                                     |                                                                                     |
| cSH                               | 458                                                                               | 270                                                                               | 426                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                                | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.09                                                                              | 0.00                                                                              | 0.03                                                                              | 0.24                                                                              | 0.24                                                                              | 0.00                                                                              | 0.00                                                                                | 0.43                                                                                | 0.43                                                                                | 0.01                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 8                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 21.6                                                                              | 18.4                                                                              | 13.7                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | C                                                                                 | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 21.6                                                                              | 18.4                                                                              | 0.2                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| ICU Level of Service              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| A                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 2: US 29 &amp; Matthew Mill Road

05/31/2021



| Lane Group              | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 135  | 182  | 245  | 248  | 81   | 41   | 610  | 120  | 67   | 1357 | 18   |
| v/c Ratio               | 0.82 | 0.49 | 0.76 | 0.76 | 0.19 | 0.32 | 0.50 | 0.18 | 0.55 | 0.95 | 0.03 |
| Control Delay           | 82.2 | 13.4 | 56.7 | 57.2 | 1.0  | 55.0 | 29.7 | 2.3  | 65.9 | 48.3 | 0.1  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 82.2 | 13.4 | 56.7 | 57.2 | 1.0  | 55.0 | 29.7 | 2.3  | 65.9 | 48.3 | 0.1  |
| Queue Length 50th (ft)  | 92   | 7    | 171  | 173  | 0    | 28   | 186  | 0    | 46   | ~593 | 0    |
| Queue Length 95th (ft)  | #216 | 74   | 255  | 257  | 0    | 63   | 246  | 20   | 93   | #744 | 0    |
| Internal Link Dist (ft) | 263  |      |      | 737  |      |      | 534  |      |      | 690  |      |
| Turn Bay Length (ft)    |      |      | 600  |      | 575  | 300  |      | 355  | 625  |      |      |
| Base Capacity (vph)     | 165  | 368  | 393  | 394  | 482  | 144  | 1225 | 672  | 130  | 1431 | 716  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.82 | 0.49 | 0.62 | 0.63 | 0.17 | 0.28 | 0.50 | 0.18 | 0.52 | 0.95 | 0.03 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 2: US 29 & Matthew Mill Road

05/31/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 78                                                                                | 45                                                                                | 166                                                                               | 412                                                                               | 36                                                                                | 74                                                                                | 37                                                                                  | 555                                                                                 | 109                                                                                 | 61                                                                                  | 1235                                                                                | 16                                                                                  |
| Future Volume (vph)               | 78                                                                                | 45                                                                                | 166                                                                               | 412                                                                               | 36                                                                                | 74                                                                                | 37                                                                                  | 555                                                                                 | 109                                                                                 | 61                                                                                  | 1235                                                                                | 16                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 0.97                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 1749                                                                              | 1599                                                                              | 1698                                                                              | 1702                                                                              | 1538                                                                              | 1770                                                                                | 3223                                                                                | 1509                                                                                | 1597                                                                                | 3505                                                                                | 1524                                                                                |
| Flt Permitted                     |                                                                                   | 0.66                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 1191                                                                              | 1599                                                                              | 1698                                                                              | 1702                                                                              | 1538                                                                              | 1770                                                                                | 3223                                                                                | 1509                                                                                | 1597                                                                                | 3505                                                                                | 1524                                                                                |
| Peak-hour factor, PHF             | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Adj. Flow (vph)                   | 86                                                                                | 49                                                                                | 182                                                                               | 453                                                                               | 40                                                                                | 81                                                                                | 41                                                                                  | 610                                                                                 | 120                                                                                 | 67                                                                                  | 1357                                                                                | 18                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 146                                                                               | 0                                                                                 | 0                                                                                 | 66                                                                                | 0                                                                                   | 0                                                                                   | 76                                                                                  | 0                                                                                   | 0                                                                                   | 11                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 135                                                                               | 36                                                                                | 245                                                                               | 248                                                                               | 15                                                                                | 41                                                                                  | 610                                                                                 | 44                                                                                  | 67                                                                                  | 1357                                                                                | 7                                                                                   |
| Heavy Vehicles (%)                | 6%                                                                                | 4%                                                                                | 1%                                                                                | 1%                                                                                | 6%                                                                                | 5%                                                                                | 2%                                                                                  | 12%                                                                                 | 7%                                                                                  | 13%                                                                                 | 3%                                                                                  | 6%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  |                                                                                   | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 15.3                                                                              | 15.3                                                                              | 21.0                                                                              | 21.0                                                                              | 21.0                                                                              | 5.2                                                                                 | 40.6                                                                                | 40.6                                                                                | 7.1                                                                                 | 42.5                                                                                | 42.5                                                                                |
| Effective Green, g (s)            |                                                                                   | 15.3                                                                              | 15.3                                                                              | 21.0                                                                              | 21.0                                                                              | 21.0                                                                              | 5.2                                                                                 | 40.6                                                                                | 40.6                                                                                | 7.1                                                                                 | 42.5                                                                                | 42.5                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.14                                                                              | 0.14                                                                              | 0.19                                                                              | 0.19                                                                              | 0.19                                                                              | 0.05                                                                                | 0.37                                                                                | 0.37                                                                                | 0.06                                                                                | 0.39                                                                                | 0.39                                                                                |
| Clearance Time (s)                |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 165                                                                               | 222                                                                               | 324                                                                               | 324                                                                               | 293                                                                               | 83                                                                                  | 1189                                                                                | 556                                                                                 | 103                                                                                 | 1354                                                                                | 588                                                                                 |
| v/s Ratio Prot                    |                                                                                   |                                                                                   | 0.02                                                                              | 0.14                                                                              | c0.15                                                                             | 0.01                                                                              | 0.02                                                                                | 0.19                                                                                | 0.03                                                                                | c0.04                                                                               | c0.39                                                                               | 0.00                                                                                |
| v/s Ratio Perm                    | c0.11                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.82                                                                              | 0.16                                                                              | 0.76                                                                              | 0.77                                                                              | 0.05                                                                              | 0.49                                                                                | 0.51                                                                                | 0.08                                                                                | 0.65                                                                                | 1.00                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 |                                                                                   | 46.0                                                                              | 41.7                                                                              | 42.1                                                                              | 42.2                                                                              | 36.4                                                                              | 51.1                                                                                | 27.0                                                                                | 22.6                                                                                | 50.2                                                                                | 33.8                                                                                | 20.8                                                                                |
| Progression Factor                |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 25.9                                                                              | 0.3                                                                               | 9.7                                                                               | 10.3                                                                              | 0.1                                                                               | 4.6                                                                                 | 1.6                                                                                 | 0.3                                                                                 | 13.8                                                                                | 25.0                                                                                | 0.0                                                                                 |
| Delay (s)                         |                                                                                   | 71.9                                                                              | 42.0                                                                              | 51.7                                                                              | 52.5                                                                              | 36.4                                                                              | 55.7                                                                                | 28.6                                                                                | 22.8                                                                                | 64.0                                                                                | 58.7                                                                                | 20.8                                                                                |
| Level of Service                  |                                                                                   | E                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | E                                                                                   | C                                                                                   | C                                                                                   | E                                                                                   | E                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 54.8                                                                              |                                                                                   |                                                                                   | 49.9                                                                              |                                                                                   |                                                                                     | 29.1                                                                                |                                                                                     |                                                                                     | 58.5                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 49.2                                                                              |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.90                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 26.0                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 75.2%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 3: US 29 & Heatherton Drive

05/31/2021



| Movement                          | EBL                                                                               | EBR  | NBL                                                                               | NBT                                                                                                                                                                 | SBT                                                                                                                                                                 | SBR                                                                               |      |
|-----------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations               |  |      |  |   |   |  |      |
| Traffic Volume (veh/h)            | 12                                                                                | 31   | 62                                                                                | 689                                                                                                                                                                 | 1809                                                                                                                                                                | 4                                                                                 |      |
| Future Volume (Veh/h)             | 12                                                                                | 31   | 62                                                                                | 689                                                                                                                                                                 | 1809                                                                                                                                                                | 4                                                                                 |      |
| Sign Control                      | Stop                                                                              |      |                                                                                   | Free                                                                                                                                                                | Free                                                                                                                                                                |                                                                                   |      |
| Grade                             | 0%                                                                                |      |                                                                                   | 0%                                                                                                                                                                  | 0%                                                                                                                                                                  |                                                                                   |      |
| Peak Hour Factor                  | 0.95                                                                              | 0.95 | 0.95                                                                              | 0.95                                                                                                                                                                | 0.95                                                                                                                                                                | 0.95                                                                              |      |
| Hourly flow rate (vph)            | 13                                                                                | 33   | 65                                                                                | 725                                                                                                                                                                 | 1904                                                                                                                                                                | 4                                                                                 |      |
| Pedestrians                       |                                                                                   |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Lane Width (ft)                   |                                                                                   |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Walking Speed (ft/s)              |                                                                                   |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Percent Blockage                  |                                                                                   |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Right turn flare (veh)            |                                                                                   |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Median type                       |                                                                                   |      |                                                                                   | Raised                                                                                                                                                              | Raised                                                                                                                                                              |                                                                                   |      |
| Median storage veh                |                                                                                   |      |                                                                                   | 2                                                                                                                                                                   | 2                                                                                                                                                                   |                                                                                   |      |
| Upstream signal (ft)              |                                                                                   |      |                                                                                   | 614                                                                                                                                                                 |                                                                                                                                                                     |                                                                                   |      |
| pX, platoon unblocked             | 0.62                                                                              | 0.62 | 0.62                                                                              |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| vC, conflicting volume            | 2396                                                                              | 952  | 1908                                                                              |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| vC1, stage 1 conf vol             | 1904                                                                              |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| vC2, stage 2 conf vol             | 492                                                                               |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| vCu, unblocked vol                | 2030                                                                              | 0    | 1245                                                                              |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| tC, single (s)                    | 6.8                                                                               | 6.9  | 4.1                                                                               |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| tC, 2 stage (s)                   | 5.8                                                                               |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| tF (s)                            | 3.5                                                                               | 3.3  | 2.2                                                                               |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| p0 queue free %                   | 91                                                                                | 95   | 82                                                                                |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| cM capacity (veh/h)               | 139                                                                               | 679  | 352                                                                               |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Direction, Lane #                 | EB 1                                                                              | NB 1 | NB 2                                                                              | NB 3                                                                                                                                                                | SB 1                                                                                                                                                                | SB 2                                                                              | SB 3 |
| Volume Total                      | 46                                                                                | 65   | 362                                                                               | 362                                                                                                                                                                 | 952                                                                                                                                                                 | 952                                                                               | 4    |
| Volume Left                       | 13                                                                                | 65   | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                 | 0    |
| Volume Right                      | 33                                                                                | 0    | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                 | 4    |
| cSH                               | 324                                                                               | 352  | 1700                                                                              | 1700                                                                                                                                                                | 1700                                                                                                                                                                | 1700                                                                              | 1700 |
| Volume to Capacity                | 0.14                                                                              | 0.18 | 0.21                                                                              | 0.21                                                                                                                                                                | 0.56                                                                                                                                                                | 0.56                                                                              | 0.00 |
| Queue Length 95th (ft)            | 12                                                                                | 17   | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 0                                                                                 | 0    |
| Control Delay (s)                 | 17.9                                                                              | 17.5 | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0  |
| Lane LOS                          | C                                                                                 | C    |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Approach Delay (s)                | 17.9                                                                              | 1.4  | 0.0                                                                               |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Approach LOS                      | C                                                                                 |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Intersection Summary              |                                                                                   |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Average Delay                     | 0.7                                                                               |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |
| Intersection Capacity Utilization | 61.5%                                                                             |      |                                                                                   | ICU Level of Service                                                                                                                                                |                                                                                                                                                                     | B                                                                                 |      |
| Analysis Period (min)             | 15                                                                                |      |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |      |

# HCM Unsignalized Intersection Capacity Analysis

## 4: US 29 & Terrace Greene Circle

06/10/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |                                                                                      |  |  |                                                                                      |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |   |  |                                                                                     |   |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 75                                                                                | 0                                                                                   | 653                                                                                                                                                                     | 13                                                                                  | 0                                                                                   | 1745                                                                                                                                                                    | 4                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 75                                                                                | 0                                                                                   | 653                                                                                                                                                                     | 13                                                                                  | 0                                                                                   | 1745                                                                                                                                                                    | 4                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         | Free                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                                                                                                         | 0%                                                                                  |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.97                                                                                | 0.97                                                                                                                                                                    | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                                                                                                    | 0.97                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 82                                                                                | 0                                                                                   | 673                                                                                                                                                                     | 13                                                                                  | 0                                                                                   | 1799                                                                                                                                                                    | 4                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                                                                                                         |                                                                                     | Raised                                                                              |                                                                                                                                                                         |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                                                                                                         |                                                                                     | 2                                                                                   |                                                                                                                                                                         |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC, conflicting volume            | 2218                                                                              | 2485                                                                              | 900                                                                               | 1576                                                                              | 2476                                                                              | 336                                                                               | 1803                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     | 686                                                                                                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 1799                                                                              | 1799                                                                              |                                                                                   | 673                                                                               | 673                                                                               |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC2, stage 2 conf vol             | 418                                                                               | 686                                                                               |                                                                                   | 902                                                                               | 1803                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vCu, unblocked vol                | 2218                                                                              | 2485                                                                              | 900                                                                               | 1576                                                                              | 2476                                                                              | 336                                                                               | 1803                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     | 686                                                                                                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 4.1                                                                                                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 2.2                                                                                                                                                                     |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 99                                                                                | 100                                                                               | 100                                                                               | 88                                                                                | 100                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 100                                                                                                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 80                                                                                | 123                                                                               | 282                                                                               | 244                                                                               | 122                                                                               | 659                                                                               | 346                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 910                                                                                                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Total                      | 3                                                                                 | 82                                                                                | 336                                                                               | 336                                                                               | 13                                                                                | 900                                                                               | 900                                                                                 | 4                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Right                      | 3                                                                                 | 82                                                                                | 0                                                                                 | 0                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                   | 4                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| cSH                               | 282                                                                               | 659                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                                | 1700                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume to Capacity                | 0.01                                                                              | 0.12                                                                              | 0.20                                                                              | 0.20                                                                              | 0.01                                                                              | 0.53                                                                              | 0.53                                                                                | 0.00                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Queue Length 95th (ft)            | 1                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Control Delay (s)                 | 17.9                                                                              | 11.2                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane LOS                          | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay (s)                | 17.9                                                                              | 11.2                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                      | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 58.2%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         | B                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 5: US 29 & Keleigh Lane

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
|                                   |  |  |  |  |  |  |      |
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |      |
| Lane Configurations               |  |                                                                                   |  |  |  |  |      |
| Traffic Volume (veh/h)            | 13                                                                                | 33                                                                                | 9                                                                                 | 670                                                                               | 1872                                                                              | 9                                                                                 |      |
| Future Volume (Veh/h)             | 13                                                                                | 33                                                                                | 9                                                                                 | 670                                                                               | 1872                                                                              | 9                                                                                 |      |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |      |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |      |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              |      |
| Hourly flow rate (vph)            | 14                                                                                | 35                                                                                | 9                                                                                 | 705                                                                               | 1971                                                                              | 9                                                                                 |      |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |      |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |      |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC, conflicting volume            | 2342                                                                              | 986                                                                               | 1980                                                                              |                                                                                   |                                                                                   |                                                                                   |      |
| vC1, stage 1 conf vol             | 1971                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC2, stage 2 conf vol             | 370                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vCu, unblocked vol                | 2342                                                                              | 986                                                                               | 1980                                                                              |                                                                                   |                                                                                   |                                                                                   |      |
| tC, single (s)                    | 6.8                                                                               | 7.0                                                                               | 4.3                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.3                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| p0 queue free %                   | 85                                                                                | 86                                                                                | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |      |
| cM capacity (veh/h)               | 94                                                                                | 245                                                                               | 256                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3 |
| Volume Total                      | 49                                                                                | 9                                                                                 | 352                                                                               | 352                                                                               | 986                                                                               | 986                                                                               | 9    |
| Volume Left                       | 14                                                                                | 9                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Volume Right                      | 35                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 9    |
| cSH                               | 168                                                                               | 256                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700 |
| Volume to Capacity                | 0.29                                                                              | 0.04                                                                              | 0.21                                                                              | 0.21                                                                              | 0.58                                                                              | 0.58                                                                              | 0.01 |
| Queue Length 95th (ft)            | 29                                                                                | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Control Delay (s)                 | 35.1                                                                              | 19.6                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Lane LOS                          | E                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Approach Delay (s)                | 35.1                                                                              | 0.2                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |      |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Average Delay                     |                                                                                   |                                                                                   | 0.7                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 61.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | B    |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |      |

# HCM Unsignalized Intersection Capacity Analysis

## 6: US 29 & Commercial Entrance

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |  |   |  |  |  |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 13                                                                                | 22                                                                                  | 540                                                                                 | 25                                                                                  | 73                                                                                  | 1769                                                                                | 0                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 13                                                                                | 22                                                                                  | 540                                                                                 | 25                                                                                  | 73                                                                                  | 1769                                                                                | 0                                                                                   |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 60                                                                                | 0                                                                                 | 14                                                                                | 24                                                                                  | 587                                                                                 | 27                                                                                  | 79                                                                                  | 1923                                                                                | 0                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2430                                                                              | 2743                                                                              | 962                                                                               | 1754                                                                              | 2716                                                                              | 294                                                                               | 1923                                                                                |                                                                                     |                                                                                     | 614                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 2081                                                                              | 2081                                                                              |                                                                                   | 635                                                                               | 635                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 348                                                                               | 662                                                                               |                                                                                   | 1120                                                                              | 2081                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2430                                                                              | 2743                                                                              | 962                                                                               | 1754                                                                              | 2716                                                                              | 294                                                                               | 1923                                                                                |                                                                                     |                                                                                     | 614                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 7.1                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 64                                                                                | 100                                                                               | 98                                                                                | 92                                                                                  |                                                                                     |                                                                                     | 92                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 50                                                                                | 84                                                                                | 260                                                                               | 165                                                                               | 62                                                                                | 685                                                                               | 311                                                                                 |                                                                                     |                                                                                     | 955                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 0                                                                                 | 74                                                                                | 24                                                                                | 294                                                                               | 294                                                                               | 27                                                                                | 79                                                                                  | 962                                                                                 | 962                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 60                                                                                | 24                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 79                                                                                  | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 27                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 1700                                                                              | 203                                                                               | 311                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 955                                                                                 | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.00                                                                              | 0.36                                                                              | 0.08                                                                              | 0.17                                                                              | 0.17                                                                              | 0.02                                                                              | 0.08                                                                                | 0.57                                                                                | 0.57                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 39                                                                                | 6                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 33.4                                                                              | 17.5                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 9.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | A                                                                                 | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               | 33.4                                                                              | 0.7                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 65.6%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 7: US 29 & Lake Saponi Drive

05/31/2021

|                                   |  |  |                                                                                    |  |  |                                                                                    |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                                                                                                                 | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                 |
| Lane Configurations               |                                                                                   |  |   |  |                                                                                   |   |
| Traffic Volume (veh/h)            | 0                                                                                 | 38                                                                                | 541                                                                                                                                                                 | 13                                                                                | 0                                                                                 | 1850                                                                                                                                                                |
| Future Volume (Veh/h)             | 0                                                                                 | 38                                                                                | 541                                                                                                                                                                 | 13                                                                                | 0                                                                                 | 1850                                                                                                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                                                                                                                |                                                                                   |                                                                                   | Free                                                                                                                                                                |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                                                                                                  |                                                                                   |                                                                                   | 0%                                                                                                                                                                  |
| Peak Hour Factor                  | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                                                                                                | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 42                                                                                | 595                                                                                                                                                                 | 14                                                                                | 0                                                                                 | 2033                                                                                                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Median type                       |                                                                                   |                                                                                   | Raised                                                                                                                                                              |                                                                                   | Raised                                                                            |                                                                                                                                                                     |
| Median storage veh)               |                                                                                   |                                                                                   | 2                                                                                                                                                                   |                                                                                   | 2                                                                                 |                                                                                                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC, conflicting volume            | 1612                                                                              | 298                                                                               |                                                                                                                                                                     |                                                                                   | 609                                                                               |                                                                                                                                                                     |
| vC1, stage 1 conf vol             | 595                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC2, stage 2 conf vol             | 1016                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vCu, unblocked vol                | 1612                                                                              | 298                                                                               |                                                                                                                                                                     |                                                                                   | 609                                                                               |                                                                                                                                                                     |
| tC, single (s)                    | 6.8                                                                               | 7.1                                                                               |                                                                                                                                                                     |                                                                                   | 4.1                                                                               |                                                                                                                                                                     |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| tF (s)                            | 3.5                                                                               | 3.4                                                                               |                                                                                                                                                                     |                                                                                   | 2.2                                                                               |                                                                                                                                                                     |
| p0 queue free %                   | 100                                                                               | 94                                                                                |                                                                                                                                                                     |                                                                                   | 100                                                                               |                                                                                                                                                                     |
| cM capacity (veh/h)               | 276                                                                               | 681                                                                               |                                                                                                                                                                     |                                                                                   | 979                                                                               |                                                                                                                                                                     |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | NB 2                                                                                                                                                                | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                                                                                                |
| Volume Total                      | 42                                                                                | 298                                                                               | 298                                                                                                                                                                 | 14                                                                                | 1016                                                                              | 1016                                                                                                                                                                |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   |
| Volume Right                      | 42                                                                                | 0                                                                                 | 0                                                                                                                                                                   | 14                                                                                | 0                                                                                 | 0                                                                                                                                                                   |
| cSH                               | 681                                                                               | 1700                                                                              | 1700                                                                                                                                                                | 1700                                                                              | 1700                                                                              | 1700                                                                                                                                                                |
| Volume to Capacity                | 0.06                                                                              | 0.17                                                                              | 0.17                                                                                                                                                                | 0.01                                                                              | 0.60                                                                              | 0.60                                                                                                                                                                |
| Queue Length 95th (ft)            | 5                                                                                 | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   |
| Control Delay (s)                 | 10.6                                                                              | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 |
| Lane LOS                          | B                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Approach Delay (s)                | 10.6                                                                              | 0.0                                                                               |                                                                                                                                                                     |                                                                                   | 0.0                                                                               |                                                                                                                                                                     |
| Approach LOS                      | B                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Average Delay                     |                                                                                   | 0.2                                                                               |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 54.5%                                                                             |                                                                                                                                                                     | ICU Level of Service                                                              |                                                                                   | A                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 8: US 29 & Greene Edge Lane

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 1                                                                                 | 1                                                                                 | 624                                                                               | 1923                                                                              | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 1                                                                                 | 1                                                                                 | 624                                                                               | 1923                                                                              | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 1                                                                                 | 1                                                                                 | 678                                                                               | 2090                                                                              | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 2431                                                                              | 1045                                                                              | 2090                                                                              |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             | 2090                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 341                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 2431                                                                              | 1045                                                                              | 2090                                                                              |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 81                                                                                | 229                                                                               | 268                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |
| Volume Total                      | 1                                                                                 | 227                                                                               | 452                                                                               | 1393                                                                              | 697                                                                               |                                                                                   |
| Volume Left                       | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Volume Right                      | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| cSH                               | 229                                                                               | 268                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.00                                                                              | 0.27                                                                              | 0.82                                                                              | 0.41                                                                              |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Control Delay (s)                 | 20.8                                                                              | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Lane LOS                          | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 20.8                                                                              | 0.1                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 63.2%                                                                             | ICU Level of Service                                                              |                                                                                   | B                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

## 9: US 29 &amp; Frays Mill Road

05/31/2021



| Lane Group              | EBT  | WBT   | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-------------------------|------|-------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 238  | 196   | 10   | 640  | 28   | 39   | 2182  | 16   |
| v/c Ratio               | 0.75 | 3.02  | 0.08 | 0.36 | 0.03 | 0.30 | 1.04  | 0.02 |
| Control Delay           | 31.4 | 964.6 | 49.0 | 16.3 | 0.1  | 54.1 | 52.5  | 0.0  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 31.4 | 964.6 | 49.0 | 16.3 | 0.1  | 54.1 | 52.5  | 0.0  |
| Queue Length 50th (ft)  | 52   | ~238  | 7    | 144  | 0    | 27   | 744   | 0    |
| Queue Length 95th (ft)  | #139 | #386  | 25   | 198  | 0    | 61   | #1174 | 0    |
| Internal Link Dist (ft) | 273  | 256   |      | 1061 |      |      | 946   |      |
| Turn Bay Length (ft)    |      |       | 350  |      | 350  | 375  |       | 375  |
| Base Capacity (vph)     | 344  | 65    | 147  | 1776 | 827  | 139  | 2108  | 1030 |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.69 | 3.02  | 0.07 | 0.36 | 0.03 | 0.28 | 1.04  | 0.02 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 9: US 29 & Frays Mill Road

05/31/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 11                                                                                | 8                                                                                 | 195                                                                               | 132                                                                               | 8                                                                                 | 36                                                                                | 9                                                                                   | 576                                                                                 | 25                                                                                  | 35                                                                                  | 1964                                                                                | 14                                                                                  |
| Future Volume (vph)               | 11                                                                                | 8                                                                                 | 195                                                                               | 132                                                                               | 8                                                                                 | 36                                                                                | 9                                                                                   | 576                                                                                 | 25                                                                                  | 35                                                                                  | 1964                                                                                | 14                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   | 0.97                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 0.96                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 1647                                                                              |                                                                                   |                                                                                   | 1747                                                                              |                                                                                   | 1805                                                                                | 3252                                                                                | 1392                                                                                | 1703                                                                                | 3505                                                                                | 1615                                                                                |
| Flt Permitted                     |                                                                                   | 0.97                                                                              |                                                                                   |                                                                                   | 0.32                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 1603                                                                              |                                                                                   |                                                                                   | 577                                                                               |                                                                                   | 1805                                                                                | 3252                                                                                | 1392                                                                                | 1703                                                                                | 3505                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                |
| Adj. Flow (vph)                   | 12                                                                                | 9                                                                                 | 217                                                                               | 147                                                                               | 9                                                                                 | 40                                                                                | 10                                                                                  | 640                                                                                 | 28                                                                                  | 39                                                                                  | 2182                                                                                | 16                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 143                                                                               | 0                                                                                 | 0                                                                                 | 8                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 13                                                                                  | 0                                                                                   | 0                                                                                   | 7                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 95                                                                                | 0                                                                                 | 0                                                                                 | 188                                                                               | 0                                                                                 | 10                                                                                  | 640                                                                                 | 15                                                                                  | 39                                                                                  | 2182                                                                                | 9                                                                                   |
| Heavy Vehicles (%)                | 18%                                                                               | 0%                                                                                | 0%                                                                                | 1%                                                                                | 13%                                                                               | 3%                                                                                | 0%                                                                                  | 11%                                                                                 | 16%                                                                                 | 6%                                                                                  | 3%                                                                                  | 0%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 12.0                                                                              |                                                                                   |                                                                                   | 11.0                                                                              |                                                                                   | 1.6                                                                                 | 57.7                                                                                | 57.7                                                                                | 5.3                                                                                 | 61.4                                                                                | 61.4                                                                                |
| Effective Green, g (s)            |                                                                                   | 12.0                                                                              |                                                                                   |                                                                                   | 11.0                                                                              |                                                                                   | 1.6                                                                                 | 57.7                                                                                | 57.7                                                                                | 5.3                                                                                 | 61.4                                                                                | 61.4                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.11                                                                              |                                                                                   |                                                                                   | 0.10                                                                              |                                                                                   | 0.01                                                                                | 0.52                                                                                | 0.52                                                                                | 0.05                                                                                | 0.56                                                                                | 0.56                                                                                |
| Clearance Time (s)                |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 3.5                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 3.5                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 174                                                                               |                                                                                   |                                                                                   | 57                                                                                |                                                                                   | 26                                                                                  | 1705                                                                                | 730                                                                                 | 82                                                                                  | 1956                                                                                | 901                                                                                 |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.01                                                                                | 0.20                                                                                | 0.01                                                                                | c0.02                                                                               | c0.62                                                                               | 0.01                                                                                |
| v/s Ratio Perm                    |                                                                                   | c0.06                                                                             |                                                                                   |                                                                                   | c0.33                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.54                                                                              |                                                                                   |                                                                                   | 3.30                                                                              |                                                                                   | 0.38                                                                                | 0.38                                                                                | 0.02                                                                                | 0.48                                                                                | 1.12                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 |                                                                                   | 46.4                                                                              |                                                                                   |                                                                                   | 49.5                                                                              |                                                                                   | 53.7                                                                                | 15.5                                                                                | 12.6                                                                                | 51.0                                                                                | 24.3                                                                                | 10.8                                                                                |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 4.3                                                                               |                                                                                   |                                                                                   | 1076.9                                                                            |                                                                                   | 10.8                                                                                | 0.6                                                                                 | 0.1                                                                                 | 5.1                                                                                 | 59.7                                                                                | 0.0                                                                                 |
| Delay (s)                         |                                                                                   | 50.7                                                                              |                                                                                   |                                                                                   | 1126.4                                                                            |                                                                                   | 64.5                                                                                | 16.1                                                                                | 12.6                                                                                | 56.1                                                                                | 84.0                                                                                | 10.8                                                                                |
| Level of Service                  |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   | E                                                                                   | B                                                                                   | B                                                                                   | E                                                                                   | F                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 50.7                                                                              |                                                                                   |                                                                                   | 1126.4                                                                            |                                                                                   |                                                                                     | 16.7                                                                                |                                                                                     |                                                                                     | 83.0                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 128.4                                                                             |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.32                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 24.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 92.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 10: US 29 & Dickerson Road

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)            | 10                                                                                | 0                                                                                 | 15                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 11                                                                                  | 601                                                                                 | 0                                                                                   | 2                                                                                   | 2118                                                                                | 16                                                                                  |
| Future Volume (Veh/h)             | 10                                                                                | 0                                                                                 | 15                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 11                                                                                  | 601                                                                                 | 0                                                                                   | 2                                                                                   | 2118                                                                                | 16                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph)            | 10                                                                                | 0                                                                                 | 16                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 11                                                                                  | 626                                                                                 | 0                                                                                   | 2                                                                                   | 2206                                                                                | 17                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2545                                                                              | 2858                                                                              | 1103                                                                              | 1771                                                                              | 2875                                                                              | 313                                                                               | 2223                                                                                |                                                                                     |                                                                                     | 626                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 2210                                                                              | 2210                                                                              |                                                                                   | 648                                                                               | 648                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 335                                                                               | 648                                                                               |                                                                                   | 1123                                                                              | 2227                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2545                                                                              | 2858                                                                              | 1103                                                                              | 1771                                                                              | 2875                                                                              | 313                                                                               | 2223                                                                                |                                                                                     |                                                                                     | 626                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.0                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.6                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.5                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 78                                                                                | 100                                                                               | 92                                                                                | 99                                                                                | 100                                                                               | 100                                                                               | 93                                                                                  |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 45                                                                                | 79                                                                                | 198                                                                               | 173                                                                               | 67                                                                                | 689                                                                               | 162                                                                                 |                                                                                     |                                                                                     | 965                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 26                                                                                | 1                                                                                 | 11                                                                                | 417                                                                               | 209                                                                               | 2                                                                                 | 1103                                                                                | 1103                                                                                | 17                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 10                                                                                | 1                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 16                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 17                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 86                                                                                | 173                                                                               | 162                                                                               | 1700                                                                              | 1700                                                                              | 965                                                                               | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.30                                                                              | 0.01                                                                              | 0.07                                                                              | 0.25                                                                              | 0.12                                                                              | 0.00                                                                              | 0.65                                                                                | 0.65                                                                                | 0.01                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 28                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 64.3                                                                              | 25.9                                                                              | 28.9                                                                              | 0.0                                                                               | 0.0                                                                               | 8.7                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | F                                                                                 | D                                                                                 | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 64.3                                                                              | 25.9                                                                              | 0.5                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | F                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 0.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 68.5%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 11: US 29 &amp; Austin Drive

05/31/2021



| Lane Group              | EBL  | EBT  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2    | 30   | 16   | 567  | 2149 | 9    |
| v/c Ratio               | 0.02 | 0.24 | 0.15 | 0.20 | 0.74 | 0.01 |
| Control Delay           | 48.0 | 23.2 | 51.4 | 2.1  | 11.9 | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 48.0 | 23.2 | 51.4 | 2.1  | 11.9 | 0.0  |
| Queue Length 50th (ft)  | 1    | 1    | 11   | 38   | 315  | 0    |
| Queue Length 95th (ft)  | 9    | 31   | 34   | 56   | #925 | 0    |
| Internal Link Dist (ft) |      | 306  |      | 669  | 657  |      |
| Turn Bay Length (ft)    |      |      | 500  |      |      | 350  |
| Base Capacity (vph)     | 126  | 131  | 183  | 2862 | 2888 | 1161 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.02 | 0.23 | 0.09 | 0.20 | 0.74 | 0.01 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 11: US 29 & Austin Drive

05/31/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)              | 2                                                                                 | 2                                                                                 | 27                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 15                                                                                  | 539                                                                                 | 0                                                                                   | 0                                                                                   | 2042                                                                                | 9                                                                                   |
| Future Volume (vph)               | 2                                                                                 | 2                                                                                 | 27                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 15                                                                                  | 539                                                                                 | 0                                                                                   | 0                                                                                   | 2042                                                                                | 9                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.86                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1805                                                                              | 1495                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1612                                                                                | 3252                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1369                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1805                                                                              | 1495                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1612                                                                                | 3252                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1369                                                                                |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 2                                                                                 | 2                                                                                 | 28                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 16                                                                                  | 567                                                                                 | 0                                                                                   | 0                                                                                   | 2149                                                                                | 9                                                                                   |
| RTOR Reduction (vph)              | 0                                                                                 | 27                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2                                                                                   |
| Lane Group Flow (vph)             | 2                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 16                                                                                  | 567                                                                                 | 0                                                                                   | 0                                                                                   | 2149                                                                                | 7                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 10%                                                                               | 0%                                                                                | 0%                                                                                | 0%                                                                                | 12%                                                                                 | 11%                                                                                 | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 18%                                                                                 |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     |                                                                                     | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 4.5                                                                               | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.1                                                                                 | 91.0                                                                                |                                                                                     |                                                                                     | 80.4                                                                                | 80.4                                                                                |
| Effective Green, g (s)            | 4.5                                                                               | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.1                                                                                 | 91.0                                                                                |                                                                                     |                                                                                     | 80.4                                                                                | 80.4                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.04                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.03                                                                                | 0.83                                                                                |                                                                                     |                                                                                     | 0.73                                                                                | 0.73                                                                                |
| Clearance Time (s)                | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 73                                                                                | 61                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 45                                                                                  | 2690                                                                                |                                                                                     |                                                                                     | 2561                                                                                | 1000                                                                                |
| v/s Ratio Prot                    | 0.00                                                                              | c0.00                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.01                                                                                | c0.17                                                                               |                                                                                     |                                                                                     | c0.61                                                                               | 0.00                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.03                                                                              | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.36                                                                                | 0.21                                                                                |                                                                                     |                                                                                     | 0.84                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 | 50.6                                                                              | 50.7                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 52.5                                                                                | 2.0                                                                                 |                                                                                     |                                                                                     | 10.3                                                                                | 4.0                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.2                                                                               | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4.8                                                                                 | 0.2                                                                                 |                                                                                     |                                                                                     | 3.5                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 50.8                                                                              | 51.1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 57.2                                                                                | 2.2                                                                                 |                                                                                     |                                                                                     | 13.8                                                                                | 4.0                                                                                 |
| Level of Service                  | D                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 51.0                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 3.7                                                                                 |                                                                                     |                                                                                     | 13.8                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 12.1                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.86                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 29.0                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 74.4%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 12: US 29 &amp; Boulders Road

05/31/2021



| Lane Group              | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 13   | 28   | 111  | 9    | 9    | 13   | 41   | 553  | 182  | 110  | 2038  | 56   |
| v/c Ratio               | 0.13 | 0.13 | 0.44 | 0.08 | 0.08 | 0.05 | 0.31 | 0.29 | 0.17 | 0.39 | 0.89  | 0.05 |
| Control Delay           | 51.2 | 49.6 | 7.4  | 50.1 | 50.1 | 0.3  | 53.7 | 12.5 | 2.4  | 51.5 | 26.2  | 0.1  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 51.2 | 49.6 | 7.4  | 50.1 | 50.1 | 0.3  | 53.7 | 12.5 | 2.4  | 51.5 | 26.2  | 0.1  |
| Queue Length 50th (ft)  | 9    | 10   | 0    | 6    | 6    | 0    | 28   | 105  | 0    | 38   | ~817  | 0    |
| Queue Length 95th (ft)  | 31   | 26   | 17   | 24   | 24   | 0    | 62   | 153  | 33   | 65   | #1009 | 0    |
| Internal Link Dist (ft) |      | 179  |      |      | 369  |      |      | 731  |      |      | 699   |      |
| Turn Bay Length (ft)    |      |      | 175  |      |      | 350  | 400  |      | 300  | 550  |       | 425  |
| Base Capacity (vph)     | 186  | 400  | 329  | 204  | 205  | 336  | 224  | 1931 | 1040 | 299  | 2282  | 1120 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.07 | 0.07 | 0.34 | 0.04 | 0.04 | 0.04 | 0.18 | 0.29 | 0.17 | 0.37 | 0.89  | 0.05 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 12: US 29 & Boulders Road

05/31/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |    |  |  |  |  |
| Traffic Volume (vph)              | 20                                                                                | 19                                                                                | 104                                                                               | 16                                                                                | 1                                                                                 | 12                                                                                | 39                                                                                 | 520                                                                                 | 171                                                                                 | 103                                                                                 | 1916                                                                                | 53                                                                                  |
| Future Volume (vph)               | 20                                                                                | 19                                                                                | 104                                                                               | 16                                                                                | 1                                                                                 | 12                                                                                | 39                                                                                 | 520                                                                                 | 171                                                                                 | 103                                                                                 | 1916                                                                                | 53                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 | 0.91                                                                              | 0.91                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 1.00                                                                                | 0.97                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                               | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.99                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1564                                                                              | 3361                                                                              | 1553                                                                              | 1715                                                                              | 1728                                                                              | 1615                                                                              | 1752                                                                               | 3223                                                                                | 1615                                                                                | 3502                                                                                | 3471                                                                                | 1615                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.99                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1564                                                                              | 3361                                                                              | 1553                                                                              | 1715                                                                              | 1728                                                                              | 1615                                                                              | 1752                                                                               | 3223                                                                                | 1615                                                                                | 3502                                                                                | 3471                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                               | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                |
| Adj. Flow (vph)                   | 21                                                                                | 20                                                                                | 111                                                                               | 17                                                                                | 1                                                                                 | 13                                                                                | 41                                                                                 | 553                                                                                 | 182                                                                                 | 110                                                                                 | 2038                                                                                | 56                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 104                                                                               | 0                                                                                 | 0                                                                                 | 12                                                                                | 0                                                                                  | 0                                                                                   | 77                                                                                  | 0                                                                                   | 0                                                                                   | 22                                                                                  |
| Lane Group Flow (vph)             | 13                                                                                | 28                                                                                | 7                                                                                 | 9                                                                                 | 9                                                                                 | 1                                                                                 | 41                                                                                 | 553                                                                                 | 105                                                                                 | 110                                                                                 | 2038                                                                                | 34                                                                                  |
| Heavy Vehicles (%)                | 5%                                                                                | 0%                                                                                | 4%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 3%                                                                                 | 12%                                                                                 | 0%                                                                                  | 0%                                                                                  | 4%                                                                                  | 0%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                               | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                  | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 7.2                                                                               | 7.2                                                                               | 7.2                                                                               | 4.3                                                                               | 4.3                                                                               | 4.3                                                                               | 5.6                                                                                | 63.2                                                                                | 63.2                                                                                | 8.9                                                                                 | 67.2                                                                                | 67.2                                                                                |
| Effective Green, g (s)            | 7.2                                                                               | 7.2                                                                               | 7.2                                                                               | 4.3                                                                               | 4.3                                                                               | 4.3                                                                               | 5.6                                                                                | 63.2                                                                                | 63.2                                                                                | 8.9                                                                                 | 67.2                                                                                | 67.2                                                                                |
| Actuated g/C Ratio                | 0.07                                                                              | 0.07                                                                              | 0.07                                                                              | 0.04                                                                              | 0.04                                                                              | 0.04                                                                              | 0.05                                                                               | 0.57                                                                                | 0.57                                                                                | 0.08                                                                                | 0.61                                                                                | 0.61                                                                                |
| Clearance Time (s)                | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 102                                                                               | 219                                                                               | 101                                                                               | 67                                                                                | 67                                                                                | 63                                                                                | 89                                                                                 | 1851                                                                                | 927                                                                                 | 283                                                                                 | 2120                                                                                | 986                                                                                 |
| v/s Ratio Prot                    | 0.01                                                                              | c0.01                                                                             | 0.00                                                                              | c0.01                                                                             | 0.01                                                                              | 0.00                                                                              | 0.02                                                                               | 0.17                                                                                | 0.06                                                                                | c0.03                                                                               | c0.59                                                                               | 0.02                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.13                                                                              | 0.13                                                                              | 0.07                                                                              | 0.13                                                                              | 0.13                                                                              | 0.01                                                                              | 0.46                                                                               | 0.30                                                                                | 0.11                                                                                | 0.39                                                                                | 0.96                                                                                | 0.03                                                                                |
| Uniform Delay, d1                 | 48.4                                                                              | 48.4                                                                              | 48.3                                                                              | 51.1                                                                              | 51.1                                                                              | 50.8                                                                              | 50.7                                                                               | 12.0                                                                                | 10.6                                                                                | 48.0                                                                                | 20.2                                                                                | 8.5                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.6                                                                               | 0.3                                                                               | 0.3                                                                               | 0.9                                                                               | 0.9                                                                               | 0.1                                                                               | 3.7                                                                                | 0.4                                                                                 | 0.2                                                                                 | 0.9                                                                                 | 12.3                                                                                | 0.1                                                                                 |
| Delay (s)                         | 49.0                                                                              | 48.7                                                                              | 48.6                                                                              | 52.0                                                                              | 52.0                                                                              | 50.9                                                                              | 54.5                                                                               | 12.4                                                                                | 10.9                                                                                | 48.9                                                                                | 32.5                                                                                | 8.6                                                                                 |
| Level of Service                  | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                  | B                                                                                   | B                                                                                   | D                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 48.6                                                                              |                                                                                   |                                                                                   | 51.5                                                                              |                                                                                   |                                                                                    | 14.3                                                                                |                                                                                     |                                                                                     | 32.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 29.2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.83                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 81.7%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>c Critical Lane Group</b>      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 13: US 29 & Camelot Drive

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 6                                                                                 | 0                                                                                 | 41                                                                                | 5                                                                                 | 0                                                                                 | 2                                                                                 | 23                                                                                  | 851                                                                                 | 7                                                                                   | 3                                                                                   | 2118                                                                                | 5                                                                                   |
| Future Volume (Veh/h)             | 6                                                                                 | 0                                                                                 | 41                                                                                | 5                                                                                 | 0                                                                                 | 2                                                                                 | 23                                                                                  | 851                                                                                 | 7                                                                                   | 3                                                                                   | 2118                                                                                | 5                                                                                   |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Hourly flow rate (vph)            | 6                                                                                 | 0                                                                                 | 43                                                                                | 5                                                                                 | 0                                                                                 | 2                                                                                 | 24                                                                                  | 896                                                                                 | 7                                                                                   | 3                                                                                   | 2229                                                                                | 5                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2733                                                                              | 3186                                                                              | 1114                                                                              | 2108                                                                              | 3184                                                                              | 448                                                                               | 2234                                                                                |                                                                                     |                                                                                     | 903                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 2235                                                                              | 2235                                                                              |                                                                                   | 944                                                                               | 944                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 498                                                                               | 951                                                                               |                                                                                   | 1164                                                                              | 2240                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2733                                                                              | 3186                                                                              | 1114                                                                              | 2108                                                                              | 3184                                                                              | 448                                                                               | 2234                                                                                |                                                                                     |                                                                                     | 903                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.8                                                                               | 6.5                                                                               | 7.0                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.2                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.8                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.6                                                                               | 4.0                                                                               | 3.4                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 83                                                                                | 100                                                                               | 78                                                                                | 96                                                                                | 100                                                                               | 100                                                                               | 89                                                                                  |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 36                                                                                | 75                                                                                | 195                                                                               | 119                                                                               | 53                                                                                | 564                                                                               | 219                                                                                 |                                                                                     |                                                                                     | 761                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 49                                                                                | 7                                                                                 | 24                                                                                | 448                                                                               | 448                                                                               | 7                                                                                 | 3                                                                                   | 1114                                                                                | 1114                                                                                | 5                                                                                   |                                                                                     |                                                                                     |
| Volume Left                       | 6                                                                                 | 5                                                                                 | 24                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 43                                                                                | 2                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 5                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 126                                                                               | 154                                                                               | 219                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 761                                                                                 | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.39                                                                              | 0.05                                                                              | 0.11                                                                              | 0.26                                                                              | 0.26                                                                              | 0.00                                                                              | 0.00                                                                                | 0.66                                                                                | 0.66                                                                                | 0.00                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 41                                                                                | 4                                                                                 | 9                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 50.5                                                                              | 29.5                                                                              | 23.4                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 9.7                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | F                                                                                 | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 50.5                                                                              | 29.5                                                                              | 0.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | F                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 68.5%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 14: US 29 &amp; Lewis and Clark Drive

05/31/2021



| Lane Group              | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 21   | 7    | 56   | 938  | 2072 | 156  |
| v/c Ratio               | 0.16 | 0.06 | 0.37 | 0.32 | 0.78 | 0.12 |
| Control Delay           | 50.4 | 27.6 | 53.5 | 2.1  | 14.9 | 1.4  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 50.4 | 27.6 | 53.5 | 2.1  | 14.9 | 1.4  |
| Queue Length 50th (ft)  | 14   | 0    | 38   | 66   | 551  | 0    |
| Queue Length 95th (ft)  | 40   | 15   | 77   | 90   | #815 | 23   |
| Internal Link Dist (ft) | 654  |      |      | 696  | 637  |      |
| Turn Bay Length (ft)    |      |      | 450  |      |      | 375  |
| Base Capacity (vph)     | 147  | 122  | 241  | 2972 | 2640 | 1253 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.14 | 0.06 | 0.23 | 0.32 | 0.78 | 0.12 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 14: US 29 & Lewis and Clark Drive

05/31/2021



| Movement               | EBL   | EBR  | NBL  | NBT   | SBU  | SBT   | SBR  |
|------------------------|-------|------|------|-------|------|-------|------|
| Lane Configurations    |       |      |      |       |      |       |      |
| Traffic Volume (vph)   | 20    | 7    | 53   | 891   | 0    | 1968  | 148  |
| Future Volume (vph)    | 20    | 7    | 53   | 891   | 0    | 1968  | 148  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 6.0   | 6.0  | 6.0  | 6.0   |      | 6.0   | 6.0  |
| Lane Util. Factor      | 1.00  | 1.00 | 1.00 | 0.95  |      | 0.95  | 1.00 |
| Frt                    | 1.00  | 0.85 | 1.00 | 1.00  |      | 1.00  | 0.85 |
| Flt Protected          | 0.95  | 1.00 | 0.95 | 1.00  |      | 1.00  | 1.00 |
| Satd. Flow (prot)      | 1805  | 1417 | 1770 | 3343  |      | 3471  | 1599 |
| Flt Permitted          | 0.95  | 1.00 | 0.95 | 1.00  |      | 1.00  | 1.00 |
| Satd. Flow (perm)      | 1805  | 1417 | 1770 | 3343  |      | 3471  | 1599 |
| Peak-hour factor, PHF  | 0.95  | 0.95 | 0.95 | 0.95  | 0.92 | 0.95  | 0.95 |
| Adj. Flow (vph)        | 21    | 7    | 56   | 938   | 0    | 2072  | 156  |
| RTOR Reduction (vph)   | 0     | 7    | 0    | 0     | 0    | 0     | 44   |
| Lane Group Flow (vph)  | 21    | 0    | 56   | 938   | 0    | 2072  | 112  |
| Heavy Vehicles (%)     | 0%    | 14%  | 2%   | 8%    | 2%   | 4%    | 1%   |
| Turn Type              | Prot  | Prot | Prot | NA    | Prot | NA    | Prot |
| Protected Phases       | 4     | 4    | 5    | 2     | 1    | 6     | 6    |
| Permitted Phases       |       |      |      |       |      |       |      |
| Actuated Green, G (s)  | 5.0   | 5.0  | 8.1  | 93.0  |      | 78.9  | 78.9 |
| Effective Green, g (s) | 5.0   | 5.0  | 8.1  | 93.0  |      | 78.9  | 78.9 |
| Actuated g/C Ratio     | 0.05  | 0.05 | 0.07 | 0.85  |      | 0.72  | 0.72 |
| Clearance Time (s)     | 6.0   | 6.0  | 6.0  | 6.0   |      | 6.0   | 6.0  |
| Vehicle Extension (s)  | 3.5   | 3.5  | 3.5  | 4.0   |      | 4.0   | 4.0  |
| Lane Grp Cap (vph)     | 82    | 64   | 130  | 2826  |      | 2489  | 1146 |
| v/s Ratio Prot         | c0.01 | 0.00 | 0.03 | c0.28 |      | c0.60 | 0.07 |
| v/s Ratio Perm         |       |      |      |       |      |       |      |
| v/c Ratio              | 0.26  | 0.00 | 0.43 | 0.33  |      | 0.83  | 0.10 |
| Uniform Delay, d1      | 50.7  | 50.1 | 48.7 | 1.8   |      | 10.9  | 4.7  |
| Progression Factor     | 1.00  | 1.00 | 1.00 | 1.00  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 2.0   | 0.0  | 2.7  | 0.3   |      | 3.4   | 0.2  |
| Delay (s)              | 52.7  | 50.2 | 51.4 | 2.1   |      | 14.3  | 4.9  |
| Level of Service       | D     | D    | D    | A     |      | B     | A    |
| Approach Delay (s)     | 52.0  |      |      | 4.9   |      | 13.7  |      |
| Approach LOS           | D     |      |      | A     |      | B     |      |

### Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 11.3  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.77  |                           |      |
| Actuated Cycle Length (s)         | 110.0 | Sum of lost time (s)      | 18.0 |
| Intersection Capacity Utilization | 71.1% | ICU Level of Service      | C    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

# HCM Unsignalized Intersection Capacity Analysis 15: US 29 (S) & U-Turn Access

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |                                                                                    |
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                 |
| Lane Configurations               |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |   |
| Traffic Volume (veh/h)            | 15                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1976                                                                                                                                                                |
| Future Volume (Veh/h)             | 15                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1976                                                                                                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                                                                                                                |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                                                                                                  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                |
| Hourly flow rate (vph)            | 16                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2148                                                                                                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Median type                       | None                                                                              |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC, conflicting volume            | 1074                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vCu, unblocked vol                | 1074                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                                                                                                     |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                                                                                                     |
| p0 queue free %                   | 93                                                                                | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                                                                                                     |
| cM capacity (veh/h)               | 215                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1622                                                                              |                                                                                                                                                                     |
| Direction, Lane #                 | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Volume Total                      | 16                                                                                | 1074                                                                              | 1074                                                                              |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Volume Left                       | 16                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                                                                                                     |
| cSH                               | 215                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Volume to Capacity                | 0.07                                                                              | 0.63                                                                              | 0.63                                                                              |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Queue Length 95th (ft)            | 6                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Control Delay (s)                 | 23.1                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Lane LOS                          | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Approach Delay (s)                | 23.1                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Average Delay                     |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 86.8%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | E                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 16: US 29 (N) & U-Turn Access

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 15                                                                                | 922                                                                               | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 15                                                                                | 922                                                                               | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 16                                                                                | 1002                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 533                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 533                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 99                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 472                                                                               | 1084                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 16                                                                                | 501                                                                               | 501                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 16                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.29                                                                              | 0.29                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 86.8%                                                                             | ICU Level of Service                                                              |                                                                                   | E                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

17: Northside Dr E & US 29 (S)

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 13                                                                                | 2057                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 13                                                                                | 2057                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 14                                                                                | 2236                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1146                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1146                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 99                                                                                |                                                                                   |
| cM capacity (veh/h)               | 191                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1622                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 14                                                                                | 1118                                                                              | 1118                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 14                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.66                                                                              | 0.66                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 64.6%                                                                             | ICU Level of Service                                                              |                                                                                   | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

18: US 29 (N) & Northside Dr E

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |  |  |  |  |  |  |  |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |                                                                                   |  |                                                                                     |  |  |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                   | 937                                                                                 | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |  |  |  |  |  |  |  |
| Future Volume (Veh/h)             | 0                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                   | 937                                                                                 | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |  |  |  |  |  |  |  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |  |  |  |  |  |  |  |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |  |  |  |  |  |  |  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |  |  |  |  |  |  |  |
| Hourly flow rate (vph)            | 0                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                   | 1018                                                                                | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |  |  |  |  |  |  |  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |  |  |  |  |  |  |  |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| vC, conflicting volume            | 510                                                                               | 1021                                                                              | 0                                                                                 | 1025                                                                              | 1018                                                                              | 509                                                                               | 0                                                                                   |                                                                                     |                                                                                     | 1021                                                                                |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| vCu, unblocked vol                | 510                                                                               | 1021                                                                              | 0                                                                                 | 1025                                                                              | 1018                                                                              | 509                                                                               | 0                                                                                   |                                                                                     |                                                                                     | 1021                                                                                |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| p0 queue free %                   | 100                                                                               | 94                                                                                | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| cM capacity (veh/h)               | 445                                                                               | 235                                                                               | 1084                                                                              | 181                                                                               | 236                                                                               | 509                                                                               | 1622                                                                                |                                                                                     |                                                                                     | 675                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Volume Total                      | 14                                                                                | 1                                                                                 | 509                                                                               | 509                                                                               | 3                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Volume Right                      | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| cSH                               | 235                                                                               | 509                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Volume to Capacity                | 0.06                                                                              | 0.00                                                                              | 0.30                                                                              | 0.30                                                                              | 0.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Queue Length 95th (ft)            | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Control Delay (s)                 | 21.3                                                                              | 12.1                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Lane LOS                          | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Approach Delay (s)                | 21.3                                                                              | 12.1                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Approach LOS                      | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Average Delay                     |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 94.1%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |

# HCM Unsignalized Intersection Capacity Analysis

19: US 29 (S) & Northside Dr W

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                                   |  |  |  |  |  |  |  |  |  |  |                                                                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                        | SBR                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | <br> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 10                                                                                | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2048                                                                                                                                                                       | 9                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 10                                                                                | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2048                                                                                                                                                                       | 9                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                       | 0.92                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 11                                                                                | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2226                                                                                                                                                                       | 10                                                                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Median storage veh)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| vC, conflicting volume            | 2228                                                                              | 2226                                                                              | 1113                                                                              | 1124                                                                              | 2236                                                                              | 0                                                                                 | 2236                                                                                |                                                                                     |                                                                                     | 0                                                                                   |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| vCu, unblocked vol                | 2228                                                                              | 2226                                                                              | 1113                                                                              | 1124                                                                              | 2236                                                                              | 0                                                                                 | 2236                                                                                |                                                                                     |                                                                                     | 0                                                                                   |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 95                                                                                | 100                                                                               | 90                                                                                | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     | 100                                                                                 |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| cM capacity (veh/h)               | 22                                                                                | 43                                                                                | 203                                                                               | 151                                                                               | 42                                                                                | 1084                                                                              | 228                                                                                 |                                                                                     |                                                                                     | 1622                                                                                |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume Total                      | 11                                                                                | 4                                                                                 | 1113                                                                              | 1113                                                                              | 10                                                                                |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume Right                      | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 10                                                                                |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| cSH                               | 203                                                                               | 42                                                                                | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume to Capacity                | 0.05                                                                              | 0.10                                                                              | 0.65                                                                              | 0.65                                                                              | 0.01                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Queue Length 95th (ft)            | 4                                                                                 | 7                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s)                 | 23.8                                                                              | 99.7                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane LOS                          | C                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s)                | 23.8                                                                              | 99.7                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                      | C                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Average Delay                     |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 66.6%                                                                             | ICU Level of Service                                                              |                                                                                   | C                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# HCM Unsignalized Intersection Capacity Analysis

20: US 29 (N) & Northside Dr W

05/31/2021



| Movement                          | EBL  | EBR  | NBL   | NBT                  | SBT  | SBR  |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations               |      |      | ↰     | ↱↱                   |      |      |
| Traffic Volume (veh/h)            | 0    | 0    | 4     | 940                  | 0    | 0    |
| Future Volume (Veh/h)             | 0    | 0    | 4     | 940                  | 0    | 0    |
| Sign Control                      | Stop |      |       | Free                 | Free |      |
| Grade                             | 0%   |      |       | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92 | 0.92  | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 0    | 0    | 4     | 1022                 | 0    | 0    |
| Pedestrians                       |      |      |       |                      |      |      |
| Lane Width (ft)                   |      |      |       |                      |      |      |
| Walking Speed (ft/s)              |      |      |       |                      |      |      |
| Percent Blockage                  |      |      |       |                      |      |      |
| Right turn flare (veh)            |      |      |       |                      |      |      |
| Median type                       |      |      |       | None                 | None |      |
| Median storage veh                |      |      |       |                      |      |      |
| Upstream signal (ft)              |      |      |       |                      |      |      |
| pX, platoon unblocked             |      |      |       |                      |      |      |
| vC, conflicting volume            | 519  | 0    | 0     |                      |      |      |
| vC1, stage 1 conf vol             |      |      |       |                      |      |      |
| vC2, stage 2 conf vol             |      |      |       |                      |      |      |
| vCu, unblocked vol                | 519  | 0    | 0     |                      |      |      |
| tC, single (s)                    | 6.8  | 6.9  | 4.1   |                      |      |      |
| tC, 2 stage (s)                   |      |      |       |                      |      |      |
| tF (s)                            | 3.5  | 3.3  | 2.2   |                      |      |      |
| p0 queue free %                   | 100  | 100  | 100   |                      |      |      |
| cM capacity (veh/h)               | 485  | 1084 | 1622  |                      |      |      |
| Direction, Lane #                 | NB 1 | NB 2 | NB 3  |                      |      |      |
| Volume Total                      | 4    | 511  | 511   |                      |      |      |
| Volume Left                       | 4    | 0    | 0     |                      |      |      |
| Volume Right                      | 0    | 0    | 0     |                      |      |      |
| cSH                               | 1622 | 1700 | 1700  |                      |      |      |
| Volume to Capacity                | 0.00 | 0.30 | 0.30  |                      |      |      |
| Queue Length 95th (ft)            | 0    | 0    | 0     |                      |      |      |
| Control Delay (s)                 | 7.2  | 0.0  | 0.0   |                      |      |      |
| Lane LOS                          | A    |      |       |                      |      |      |
| Approach Delay (s)                | 0.0  |      |       |                      |      |      |
| Approach LOS                      |      |      |       |                      |      |      |
| Intersection Summary              |      |      |       |                      |      |      |
| Average Delay                     |      |      | 0.0   |                      |      |      |
| Intersection Capacity Utilization |      |      | 66.6% | ICU Level of Service |      | C    |
| Analysis Period (min)             |      |      | 15    |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

## 21: Airport Acres Rd (North) E & US 29 (S)

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 2083                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 2083                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 2264                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1134                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1134                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)               | 196                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1622                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 1                                                                                 | 1132                                                                              | 1132                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.67                                                                              | 0.67                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 60.9%                                                                             | ICU Level of Service                                                              |                                                                                   | B                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 22: Airport Acres Rd (North) E & US 29 (N)

05/31/2021



| Movement                          | EBL  | EBR   | NBL  | NBT                  | SBT  | SBR  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               |      |       |      |                      |      |      |
| Traffic Volume (veh/h)            | 1    | 0     | 0    | 918                  | 0    | 0    |
| Future Volume (Veh/h)             | 1    | 0     | 0    | 918                  | 0    | 0    |
| Sign Control                      | Stop |       |      | Free                 | Free |      |
| Grade                             | 0%   |       |      | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92  | 0.92 | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 1    | 0     | 0    | 998                  | 0    | 0    |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       |      |       |      | None                 | None |      |
| Median storage veh                |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 499  | 0     | 0    |                      |      |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 499  | 0     | 0    |                      |      |      |
| tC, single (s)                    | 6.8  | 6.9   | 4.1  |                      |      |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   | 2.2  |                      |      |      |
| p0 queue free %                   | 100  | 100   | 100  |                      |      |      |
| cM capacity (veh/h)               | 501  | 1084  | 1622 |                      |      |      |
| Direction, Lane #                 | EB 1 | NB 1  | NB 2 |                      |      |      |
| Volume Total                      | 1    | 499   | 499  |                      |      |      |
| Volume Left                       | 1    | 0     | 0    |                      |      |      |
| Volume Right                      | 0    | 0     | 0    |                      |      |      |
| cSH                               | 501  | 1700  | 1700 |                      |      |      |
| Volume to Capacity                | 0.00 | 0.29  | 0.29 |                      |      |      |
| Queue Length 95th (ft)            | 0    | 0     | 0    |                      |      |      |
| Control Delay (s)                 | 12.2 | 0.0   | 0.0  |                      |      |      |
| Lane LOS                          | B    |       |      |                      |      |      |
| Approach Delay (s)                | 12.2 | 0.0   |      |                      |      |      |
| Approach LOS                      | B    |       |      |                      |      |      |
| Intersection Summary              |      |       |      |                      |      |      |
| Average Delay                     |      | 0.0   |      |                      |      |      |
| Intersection Capacity Utilization |      | 35.4% |      | ICU Level of Service |      | A    |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

23: US 29 (S) & Airport Acres Rd (North) W

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |                                                                                      |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2082                                                                                                                                                                    | 1                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2082                                                                                                                                                                    | 1                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                                                                                                    |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2263                                                                                                                                                                    | 1                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                                                                                                         |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC, conflicting volume            | 2264                                                                              | 2264                                                                              | 1132                                                                              | 1134                                                                              | 2264                                                                              | 0                                                                                 | 2264                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                       |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vCu, unblocked vol                | 2264                                                                              | 2264                                                                              | 1132                                                                              | 1134                                                                              | 2264                                                                              | 0                                                                                 | 2264                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                       |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                                                                                                     |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                                                                                                     |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 98                                                                                | 100                                                                               | 98                                                                                | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 100                                                                                                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 22                                                                                | 40                                                                                | 197                                                                               | 155                                                                               | 40                                                                                | 1084                                                                              | 223                                                                                 |                                                                                     |                                                                                     |                                                                                     | 1622                                                                                                                                                                    |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Total                      | 3                                                                                 | 1                                                                                 | 1509                                                                              | 755                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Right                      | 3                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| cSH                               | 197                                                                               | 40                                                                                | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume to Capacity                | 0.02                                                                              | 0.02                                                                              | 0.89                                                                              | 0.44                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Queue Length 95th (ft)            | 1                                                                                 | 2                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Control Delay (s)                 | 23.6                                                                              | 96.7                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane LOS                          | C                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay (s)                | 23.6                                                                              | 96.7                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                      | C                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 67.6%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

24: US 29 (N)

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 918                                                                               | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 1                                                                                 | 918                                                                               | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 998                                                                               | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 501                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 501                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 499                                                                               | 1084                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 1                                                                                 | 499                                                                               | 499                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.29                                                                              | 0.29                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 67.6%                                                                             | ICU Level of Service                                                              |                                                                                   | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 25: US 29 & Airport Acres Rd South

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |  |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 2                                                                                 | 5                                                                                 | 15                                                                                | 888                                                                               | 2078                                                                              | 1                                                                                 |
| Future Volume (Veh/h)             | 2                                                                                 | 5                                                                                 | 15                                                                                | 888                                                                               | 2078                                                                              | 1                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 2                                                                                 | 5                                                                                 | 16                                                                                | 955                                                                               | 2234                                                                              | 1                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 872                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.85                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 2744                                                                              | 1118                                                                              | 2235                                                                              |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             | 2234                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 510                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 2698                                                                              | 1118                                                                              | 2235                                                                              |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 7.3                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.5                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 97                                                                                | 97                                                                                | 93                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 67                                                                                | 175                                                                               | 235                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              |
| Volume Total                      | 7                                                                                 | 16                                                                                | 478                                                                               | 478                                                                               | 1489                                                                              | 746                                                                               |
| Volume Left                       | 2                                                                                 | 16                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Volume Right                      | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 |
| cSH                               | 120                                                                               | 235                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              |
| Volume to Capacity                | 0.06                                                                              | 0.07                                                                              | 0.28                                                                              | 0.28                                                                              | 0.88                                                                              | 0.44                                                                              |
| Queue Length 95th (ft)            | 5                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Control Delay (s)                 | 36.9                                                                              | 21.4                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Lane LOS                          | E                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 36.9                                                                              | 0.4                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 67.5%                                                                             |                                                                                   | ICU Level of Service                                                              | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

## 26: US 29 &amp; Airport Road

05/31/2021



| Lane Group              | EBL  | EBT  | EBR  | WBL   | WBT   | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|-------|-------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 96   | 63   | 83   | 112   | 190   | 161  | 782  | 111  | 206  | 1787 | 99   |
| v/c Ratio               | 0.44 | 0.54 | 0.12 | 0.93  | 1.12  | 0.70 | 0.49 | 0.11 | 0.84 | 0.95 | 0.09 |
| Control Delay           | 58.6 | 69.6 | 0.4  | 117.9 | 136.9 | 69.5 | 22.5 | 0.2  | 77.2 | 37.5 | 0.9  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 58.6 | 69.6 | 0.4  | 117.9 | 136.9 | 69.5 | 22.5 | 0.2  | 77.2 | 37.5 | 0.9  |
| Queue Length 50th (ft)  | 36   | 46   | 0    | 84    | ~118  | 61   | 207  | 0    | 150  | 629  | 0    |
| Queue Length 95th (ft)  | 63   | #98  | 0    | #196  | #267  | #107 | 263  | 0    | #272 | #826 | 12   |
| Internal Link Dist (ft) |      | 677  |      |       | 627   |      | 911  |      |      | 792  |      |
| Turn Bay Length (ft)    | 425  |      | 450  | 570   |       | 575  |      | 430  | 475  |      | 540  |
| Base Capacity (vph)     | 223  | 117  | 664  | 121   | 170   | 229  | 1585 | 1014 | 255  | 1880 | 1078 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.43 | 0.54 | 0.13 | 0.93  | 1.12  | 0.70 | 0.49 | 0.11 | 0.81 | 0.95 | 0.09 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 26: US 29 & Airport Road

05/31/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 90                                                                                | 59                                                                                | 78                                                                                | 105                                                                               | 62                                                                                | 117                                                                               | 151                                                                                 | 735                                                                                 | 104                                                                                 | 194                                                                                 | 1680                                                                                | 93                                                                                  |
| Future Volume (vph)               | 90                                                                                | 59                                                                                | 78                                                                                | 105                                                                               | 62                                                                                | 117                                                                               | 151                                                                                 | 735                                                                                 | 104                                                                                 | 194                                                                                 | 1680                                                                                | 93                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 10.5                                                                              | 6.7                                                                               | 6.7                                                                               | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                 | 5.7                                                                                 | 5.7                                                                                 | 8.1                                                                                 | 5.7                                                                                 | 5.7                                                                                 |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.88                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.97                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.90                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 3433                                                                              | 1845                                                                              | 2538                                                                              | 1770                                                                              | 1681                                                                              |                                                                                   | 3433                                                                                | 3374                                                                                | 1524                                                                                | 1736                                                                                | 3471                                                                                | 1495                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 3433                                                                              | 1845                                                                              | 2538                                                                              | 1770                                                                              | 1681                                                                              |                                                                                   | 3433                                                                                | 3374                                                                                | 1524                                                                                | 1736                                                                                | 3471                                                                                | 1495                                                                                |
| Peak-hour factor, PHF             | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                |
| Adj. Flow (vph)                   | 96                                                                                | 63                                                                                | 83                                                                                | 112                                                                               | 66                                                                                | 124                                                                               | 161                                                                                 | 782                                                                                 | 111                                                                                 | 206                                                                                 | 1787                                                                                | 99                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 67                                                                                | 0                                                                                 | 59                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 46                                                                                  | 0                                                                                   | 0                                                                                   | 34                                                                                  |
| Lane Group Flow (vph)             | 96                                                                                | 63                                                                                | 16                                                                                | 112                                                                               | 131                                                                               | 0                                                                                 | 161                                                                                 | 782                                                                                 | 65                                                                                  | 206                                                                                 | 1787                                                                                | 65                                                                                  |
| Heavy Vehicles (%)                | 2%                                                                                | 3%                                                                                | 12%                                                                               | 2%                                                                                | 0%                                                                                | 3%                                                                                | 2%                                                                                  | 7%                                                                                  | 6%                                                                                  | 4%                                                                                  | 4%                                                                                  | 8%                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | pt+ov                                                                             | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  | pt+ov                                                                               |
| Protected Phases                  | 7                                                                                 | 4                                                                                 | 4 5                                                                               | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   | 2 3                                                                                 | 1                                                                                   | 6                                                                                   | 6 7                                                                                 |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 7.3                                                                               | 7.3                                                                               | 21.7                                                                              | 7.9                                                                               | 7.6                                                                               |                                                                                   | 7.7                                                                                 | 54.0                                                                                | 67.6                                                                                | 16.2                                                                                | 62.3                                                                                | 75.3                                                                                |
| Effective Green, g (s)            | 7.3                                                                               | 7.3                                                                               | 21.7                                                                              | 7.9                                                                               | 7.6                                                                               |                                                                                   | 7.7                                                                                 | 54.0                                                                                | 67.6                                                                                | 16.2                                                                                | 62.3                                                                                | 75.3                                                                                |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              | 0.19                                                                              | 0.07                                                                              | 0.07                                                                              |                                                                                   | 0.07                                                                                | 0.47                                                                                | 0.59                                                                                | 0.14                                                                                | 0.54                                                                                | 0.65                                                                                |
| Clearance Time (s)                | 10.5                                                                              | 6.7                                                                               |                                                                                   | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                 | 5.7                                                                                 |                                                                                     | 8.1                                                                                 | 5.7                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 217                                                                               | 117                                                                               | 478                                                                               | 121                                                                               | 111                                                                               |                                                                                   | 229                                                                                 | 1584                                                                                | 895                                                                                 | 244                                                                                 | 1880                                                                                | 978                                                                                 |
| v/s Ratio Prot                    | 0.03                                                                              | 0.03                                                                              | 0.01                                                                              | c0.06                                                                             | c0.08                                                                             |                                                                                   | 0.05                                                                                | 0.23                                                                                | 0.04                                                                                | c0.12                                                                               | c0.51                                                                               | 0.04                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.44                                                                              | 0.54                                                                              | 0.03                                                                              | 0.93                                                                              | 1.18                                                                              |                                                                                   | 0.70                                                                                | 0.49                                                                                | 0.07                                                                                | 0.84                                                                                | 0.95                                                                                | 0.07                                                                                |
| Uniform Delay, d1                 | 51.9                                                                              | 52.2                                                                              | 38.1                                                                              | 53.3                                                                              | 53.7                                                                              |                                                                                   | 52.5                                                                                | 21.1                                                                                | 10.2                                                                                | 48.2                                                                                | 24.9                                                                                | 7.2                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 1.4                                                                               | 4.7                                                                               | 0.0                                                                               | 58.7                                                                              | 142.3                                                                             |                                                                                   | 9.4                                                                                 | 1.1                                                                                 | 0.0                                                                                 | 22.5                                                                                | 12.0                                                                                | 0.0                                                                                 |
| Delay (s)                         | 53.3                                                                              | 56.9                                                                              | 38.1                                                                              | 111.9                                                                             | 196.0                                                                             |                                                                                   | 61.9                                                                                | 22.2                                                                                | 10.2                                                                                | 70.7                                                                                | 36.9                                                                                | 7.2                                                                                 |
| Level of Service                  | D                                                                                 | E                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 |                                                                                   | E                                                                                   | C                                                                                   | B                                                                                   | E                                                                                   | D                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 49.0                                                                              |                                                                                   |                                                                                   | 164.8                                                                             |                                                                                   |                                                                                     | 27.0                                                                                |                                                                                     |                                                                                     | 38.8                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 46.4                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.02                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 115.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 30.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 87.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 1: US 29 & Deerfield Drive

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 50                                                                                | 1                                                                                 | 22                                                                                | 9                                                                                 | 4                                                                                 | 18                                                                                | 33                                                                                  | 1421                                                                                | 24                                                                                  | 7                                                                                   | 865                                                                                 | 46                                                                                  |
| Future Volume (Veh/h)             | 50                                                                                | 1                                                                                 | 22                                                                                | 9                                                                                 | 4                                                                                 | 18                                                                                | 33                                                                                  | 1421                                                                                | 24                                                                                  | 7                                                                                   | 865                                                                                 | 46                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph)            | 52                                                                                | 1                                                                                 | 23                                                                                | 9                                                                                 | 4                                                                                 | 19                                                                                | 34                                                                                  | 1480                                                                                | 25                                                                                  | 7                                                                                   | 901                                                                                 | 48                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            | 7                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              | 770                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.66                                                                              | 0.66                                                                              |                                                                                   | 0.66                                                                              | 0.66                                                                              | 0.66                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.66                                                                                |                                                                                     |                                                                                     |
| vC, conflicting volume            | 1744                                                                              | 2488                                                                              | 450                                                                               | 2013                                                                              | 2511                                                                              | 740                                                                               | 949                                                                                 |                                                                                     |                                                                                     | 1505                                                                                |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 915                                                                               | 915                                                                               |                                                                                   | 1548                                                                              | 1548                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 829                                                                               | 1573                                                                              |                                                                                   | 465                                                                               | 963                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1090                                                                              | 2221                                                                              | 450                                                                               | 1499                                                                              | 2256                                                                              | 0                                                                                 | 949                                                                                 |                                                                                     |                                                                                     | 726                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 7.0                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 6.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.2                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 80                                                                                | 99                                                                                | 96                                                                                | 95                                                                                | 97                                                                                | 97                                                                                | 95                                                                                  |                                                                                     |                                                                                     | 99                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 266                                                                               | 189                                                                               | 562                                                                               | 200                                                                               | 157                                                                               | 717                                                                               | 732                                                                                 |                                                                                     |                                                                                     | 583                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 76                                                                                | 32                                                                                | 34                                                                                | 740                                                                               | 740                                                                               | 25                                                                                | 7                                                                                   | 450                                                                                 | 450                                                                                 | 48                                                                                  |                                                                                     |                                                                                     |
| Volume Left                       | 52                                                                                | 9                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 23                                                                                | 19                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 25                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 48                                                                                  |                                                                                     |                                                                                     |
| cSH                               | 380                                                                               | 330                                                                               | 732                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 583                                                                                 | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.20                                                                              | 0.10                                                                              | 0.05                                                                              | 0.44                                                                              | 0.44                                                                              | 0.01                                                                              | 0.01                                                                                | 0.27                                                                                | 0.27                                                                                | 0.03                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 18                                                                                | 8                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 18.9                                                                              | 17.1                                                                              | 10.2                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 11.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | C                                                                                 | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 18.9                                                                              | 17.1                                                                              | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 54.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 2: US 29 &amp; Matthew Mill Road

05/31/2021



| Lane Group              | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 145  | 91   | 128  | 130  | 71   | 173  | 1358 | 383  | 99   | 776  | 64   |
| v/c Ratio               | 0.78 | 0.23 | 0.65 | 0.63 | 0.19 | 0.69 | 0.83 | 0.40 | 0.81 | 0.56 | 0.08 |
| Control Delay           | 78.4 | 1.4  | 65.3 | 63.7 | 1.2  | 62.8 | 33.8 | 3.2  | 98.5 | 31.4 | 0.2  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 78.4 | 1.4  | 65.3 | 63.7 | 1.2  | 62.8 | 33.8 | 3.2  | 98.5 | 31.4 | 0.2  |
| Queue Length 50th (ft)  | 109  | 0    | 101  | 102  | 0    | 129  | 478  | 0    | 77   | 246  | 0    |
| Queue Length 95th (ft)  | #249 | 0    | 165  | 166  | 0    | 195  | 579  | 53   | #177 | 338  | 0    |
| Internal Link Dist (ft) | 263  |      |      | 737  |      |      | 534  |      |      | 690  |      |
| Turn Bay Length (ft)    |      |      | 600  |      | 575  | 300  |      | 355  | 625  |      |      |
| Base Capacity (vph)     | 186  | 389  | 259  | 270  | 419  | 361  | 1632 | 956  | 122  | 1381 | 757  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.78 | 0.23 | 0.49 | 0.48 | 0.17 | 0.48 | 0.83 | 0.40 | 0.81 | 0.56 | 0.08 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 2: US 29 & Matthew Mill Road

05/31/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 81                                                                                | 57                                                                                | 86                                                                                | 176                                                                               | 69                                                                                | 67                                                                                | 164                                                                                 | 1290                                                                                | 364                                                                                 | 94                                                                                  | 737                                                                                 | 61                                                                                  |
| Future Volume (vph)               | 81                                                                                | 57                                                                                | 86                                                                                | 176                                                                               | 69                                                                                | 67                                                                                | 164                                                                                 | 1290                                                                                | 364                                                                                 | 94                                                                                  | 737                                                                                 | 61                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 0.97                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 1846                                                                              | 1599                                                                              | 1681                                                                              | 1751                                                                              | 1599                                                                              | 1805                                                                                | 3505                                                                                | 1615                                                                                | 1805                                                                                | 3505                                                                                | 1615                                                                                |
| Flt Permitted                     |                                                                                   | 0.74                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 1412                                                                              | 1599                                                                              | 1681                                                                              | 1751                                                                              | 1599                                                                              | 1805                                                                                | 3505                                                                                | 1615                                                                                | 1805                                                                                | 3505                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 85                                                                                | 60                                                                                | 91                                                                                | 185                                                                               | 73                                                                                | 71                                                                                | 173                                                                                 | 1358                                                                                | 383                                                                                 | 99                                                                                  | 776                                                                                 | 64                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 79                                                                                | 0                                                                                 | 0                                                                                 | 63                                                                                | 0                                                                                   | 0                                                                                   | 205                                                                                 | 0                                                                                   | 0                                                                                   | 39                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 145                                                                               | 12                                                                                | 128                                                                               | 130                                                                               | 8                                                                                 | 173                                                                                 | 1358                                                                                | 178                                                                                 | 99                                                                                  | 776                                                                                 | 25                                                                                  |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 1%                                                                                | 2%                                                                                | 0%                                                                                | 1%                                                                                | 0%                                                                                  | 3%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 0%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  |                                                                                   | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 15.9                                                                              | 15.9                                                                              | 14.1                                                                              | 14.1                                                                              | 14.1                                                                              | 16.7                                                                                | 55.9                                                                                | 55.9                                                                                | 8.1                                                                                 | 47.3                                                                                | 47.3                                                                                |
| Effective Green, g (s)            |                                                                                   | 15.9                                                                              | 15.9                                                                              | 14.1                                                                              | 14.1                                                                              | 14.1                                                                              | 16.7                                                                                | 55.9                                                                                | 55.9                                                                                | 8.1                                                                                 | 47.3                                                                                | 47.3                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.13                                                                              | 0.13                                                                              | 0.12                                                                              | 0.12                                                                              | 0.12                                                                              | 0.14                                                                                | 0.47                                                                                | 0.47                                                                                | 0.07                                                                                | 0.39                                                                                | 0.39                                                                                |
| Clearance Time (s)                |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 187                                                                               | 211                                                                               | 197                                                                               | 205                                                                               | 187                                                                               | 251                                                                                 | 1632                                                                                | 752                                                                                 | 121                                                                                 | 1381                                                                                | 636                                                                                 |
| v/s Ratio Prot                    |                                                                                   |                                                                                   | 0.01                                                                              | c0.08                                                                             | 0.07                                                                              | 0.01                                                                              | c0.10                                                                               | c0.39                                                                               | 0.11                                                                                | 0.05                                                                                | 0.22                                                                                | 0.02                                                                                |
| v/s Ratio Perm                    | c0.10                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.78                                                                              | 0.06                                                                              | 0.65                                                                              | 0.63                                                                              | 0.04                                                                              | 0.69                                                                                | 0.83                                                                                | 0.24                                                                                | 0.82                                                                                | 0.56                                                                                | 0.04                                                                                |
| Uniform Delay, d1                 |                                                                                   | 50.3                                                                              | 45.5                                                                              | 50.6                                                                              | 50.5                                                                              | 47.0                                                                              | 49.2                                                                                | 28.0                                                                                | 19.2                                                                                | 55.2                                                                                | 28.3                                                                                | 22.4                                                                                |
| Progression Factor                |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 18.0                                                                              | 0.1                                                                               | 7.2                                                                               | 6.3                                                                               | 0.1                                                                               | 7.7                                                                                 | 5.1                                                                                 | 0.7                                                                                 | 33.2                                                                                | 1.7                                                                                 | 0.1                                                                                 |
| Delay (s)                         |                                                                                   | 68.3                                                                              | 45.6                                                                              | 57.8                                                                              | 56.8                                                                              | 47.1                                                                              | 56.8                                                                                | 33.1                                                                                | 20.0                                                                                | 88.4                                                                                | 29.9                                                                                | 22.5                                                                                |
| Level of Service                  |                                                                                   | E                                                                                 | D                                                                                 | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | C                                                                                   | B                                                                                   | F                                                                                   | C                                                                                   | C                                                                                   |
| Approach Delay (s)                |                                                                                   | 59.6                                                                              |                                                                                   |                                                                                   | 55.1                                                                              |                                                                                   |                                                                                     | 32.6                                                                                |                                                                                     |                                                                                     | 35.6                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 37.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.81                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 71.9%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 3: US 29 & Heatherton Drive

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
|                                   |  |  |  |  |  |  |      |
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |      |
| Lane Configurations               |  |                                                                                   |  |  |  |  |      |
| Traffic Volume (veh/h)            | 8                                                                                 | 12                                                                                | 57                                                                                | 1810                                                                              | 985                                                                               | 14                                                                                |      |
| Future Volume (Veh/h)             | 8                                                                                 | 12                                                                                | 57                                                                                | 1810                                                                              | 985                                                                               | 14                                                                                |      |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |      |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |      |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              |      |
| Hourly flow rate (vph)            | 8                                                                                 | 13                                                                                | 60                                                                                | 1905                                                                              | 1037                                                                              | 15                                                                                |      |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |      |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |      |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 614                                                                               |                                                                                   |                                                                                   |      |
| pX, platoon unblocked             | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              |                                                                                   |                                                                                   |                                                                                   |      |
| vC, conflicting volume            | 2110                                                                              | 518                                                                               | 1052                                                                              |                                                                                   |                                                                                   |                                                                                   |      |
| vC1, stage 1 conf vol             | 1037                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC2, stage 2 conf vol             | 1072                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vCu, unblocked vol                | 1926                                                                              | 8                                                                                 | 652                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| p0 queue free %                   | 96                                                                                | 99                                                                                | 92                                                                                |                                                                                   |                                                                                   |                                                                                   |      |
| cM capacity (veh/h)               | 223                                                                               | 894                                                                               | 783                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3 |
| Volume Total                      | 21                                                                                | 60                                                                                | 952                                                                               | 952                                                                               | 518                                                                               | 518                                                                               | 15   |
| Volume Left                       | 8                                                                                 | 60                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Volume Right                      | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 15   |
| cSH                               | 417                                                                               | 783                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700 |
| Volume to Capacity                | 0.05                                                                              | 0.08                                                                              | 0.56                                                                              | 0.56                                                                              | 0.30                                                                              | 0.30                                                                              | 0.01 |
| Queue Length 95th (ft)            | 4                                                                                 | 6                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Control Delay (s)                 | 14.1                                                                              | 10.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Lane LOS                          | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Approach Delay (s)                | 14.1                                                                              | 0.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Approach LOS                      | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Average Delay                     | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Capacity Utilization | 60.0%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   | B                                                                                 |      |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |

# HCM Unsignalized Intersection Capacity Analysis

## 4: US 29 & Terrace Greene Circle

06/10/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |                                                                                      |  |  |                                                                                      |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |   |  |                                                                                     |   |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 57                                                                                | 0                                                                                   | 1815                                                                                                                                                                    | 108                                                                                 | 0                                                                                   | 963                                                                                                                                                                     | 0                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 57                                                                                | 0                                                                                   | 1815                                                                                                                                                                    | 108                                                                                 | 0                                                                                   | 963                                                                                                                                                                     | 0                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         | Free                                                                                |                                                                                     | Free                                                                                                                                                                    |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                                                                                                         | 0%                                                                                  |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 62                                                                                | 0                                                                                   | 2017                                                                                                                                                                    | 120                                                                                 | 0                                                                                   | 1070                                                                                                                                                                    | 0                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                                                                                                         | Raised                                                                              |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                                                                                                         | 2                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC, conflicting volume            | 2140                                                                              | 3207                                                                              | 535                                                                               | 2552                                                                              | 3087                                                                              | 1008                                                                              | 1070                                                                                |                                                                                                                                                                         |                                                                                     | 2137                                                                                |                                                                                                                                                                         |                                                                                     |
| vC1, stage 1 conf vol             | 1070                                                                              | 1070                                                                              |                                                                                   | 2017                                                                              | 2017                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC2, stage 2 conf vol             | 1070                                                                              | 2137                                                                              |                                                                                   | 535                                                                               | 1070                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vCu, unblocked vol                | 2140                                                                              | 3207                                                                              | 535                                                                               | 2552                                                                              | 3087                                                                              | 1008                                                                              | 1070                                                                                |                                                                                                                                                                         |                                                                                     | 2137                                                                                |                                                                                                                                                                         |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                                                                                                         |                                                                                     | 4.1                                                                                 |                                                                                                                                                                         |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                                                                                                         |                                                                                     | 2.2                                                                                 |                                                                                                                                                                         |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 74                                                                                | 100                                                                                 |                                                                                                                                                                         |                                                                                     | 100                                                                                 |                                                                                                                                                                         |                                                                                     |
| cM capacity (veh/h)               | 136                                                                               | 81                                                                                | 490                                                                               | 58                                                                                | 93                                                                                | 238                                                                               | 659                                                                                 |                                                                                                                                                                         |                                                                                     | 257                                                                                 |                                                                                                                                                                         |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Total                      | 0                                                                                 | 62                                                                                | 1008                                                                              | 1008                                                                              | 120                                                                               | 535                                                                               | 535                                                                                 | 0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Right                      | 0                                                                                 | 62                                                                                | 0                                                                                 | 0                                                                                 | 120                                                                               | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| cSH                               | 1700                                                                              | 238                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                                | 1700                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume to Capacity                | 0.00                                                                              | 0.26                                                                              | 0.59                                                                              | 0.59                                                                              | 0.07                                                                              | 0.31                                                                              | 0.31                                                                                | 0.00                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 25                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 25.3                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane LOS                          | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               | 25.3                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                      | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 60.4%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         | B                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 5: US 29 & Keleigh Lane

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
|                                   |  |  |  |  |  |  |      |
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |      |
| Lane Configurations               |  |                                                                                   |  |  |  |  |      |
| Traffic Volume (veh/h)            | 11                                                                                | 10                                                                                | 26                                                                                | 1979                                                                              | 942                                                                               | 17                                                                                |      |
| Future Volume (Veh/h)             | 11                                                                                | 10                                                                                | 26                                                                                | 1979                                                                              | 942                                                                               | 17                                                                                |      |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |      |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |      |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |      |
| Hourly flow rate (vph)            | 11                                                                                | 10                                                                                | 27                                                                                | 2061                                                                              | 981                                                                               | 18                                                                                |      |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |      |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |      |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC, conflicting volume            | 2066                                                                              | 490                                                                               | 999                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| vC1, stage 1 conf vol             | 981                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC2, stage 2 conf vol             | 1084                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vCu, unblocked vol                | 2066                                                                              | 490                                                                               | 999                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| p0 queue free %                   | 95                                                                                | 98                                                                                | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |      |
| cM capacity (veh/h)               | 211                                                                               | 529                                                                               | 701                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3 |
| Volume Total                      | 21                                                                                | 27                                                                                | 1030                                                                              | 1030                                                                              | 490                                                                               | 490                                                                               | 18   |
| Volume Left                       | 11                                                                                | 27                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Volume Right                      | 10                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 18   |
| cSH                               | 295                                                                               | 701                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700 |
| Volume to Capacity                | 0.07                                                                              | 0.04                                                                              | 0.61                                                                              | 0.61                                                                              | 0.29                                                                              | 0.29                                                                              | 0.01 |
| Queue Length 95th (ft)            | 6                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Control Delay (s)                 | 18.1                                                                              | 10.3                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Lane LOS                          | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Approach Delay (s)                | 18.1                                                                              | 0.1                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Average Delay                     |                                                                                   |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 64.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | C    |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |      |

# HCM Unsignalized Intersection Capacity Analysis

## 6: US 29 & Commercial Entrance

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |  |   |  |  |  |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 44                                                                                | 11                                                                                  | 1931                                                                                | 29                                                                                  | 65                                                                                  | 893                                                                                 | 0                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 44                                                                                | 11                                                                                  | 1931                                                                                | 29                                                                                  | 65                                                                                  | 893                                                                                 | 0                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 45                                                                                | 11                                                                                  | 1991                                                                                | 30                                                                                  | 67                                                                                  | 921                                                                                 | 0                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2095                                                                              | 3098                                                                              | 460                                                                               | 2608                                                                              | 3068                                                                              | 996                                                                               | 921                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2021                                                                                |                                                                                     |
| vC1, stage 1 conf vol             | 1055                                                                              | 1055                                                                              |                                                                                   | 2013                                                                              | 2013                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 1040                                                                              | 2043                                                                              |                                                                                   | 594                                                                               | 1055                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2095                                                                              | 3098                                                                              | 460                                                                               | 2608                                                                              | 3068                                                                              | 996                                                                               | 921                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2021                                                                                |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 95                                                                                | 100                                                                               | 82                                                                                | 99                                                                                  |                                                                                     |                                                                                     |                                                                                     | 76                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 107                                                                               | 31                                                                                | 553                                                                               | 59                                                                                | 89                                                                                | 247                                                                               | 750                                                                                 |                                                                                     |                                                                                     |                                                                                     | 278                                                                                 |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 0                                                                                 | 48                                                                                | 11                                                                                | 996                                                                               | 996                                                                               | 30                                                                                | 67                                                                                  | 460                                                                                 | 460                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 3                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 67                                                                                  | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 45                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 30                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 1700                                                                              | 263                                                                               | 750                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 278                                                                                 | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.00                                                                              | 0.18                                                                              | 0.01                                                                              | 0.59                                                                              | 0.59                                                                              | 0.02                                                                              | 0.24                                                                                | 0.27                                                                                | 0.27                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 16                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 23                                                                                  | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 25.8                                                                              | 9.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 22.0                                                                                | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | A                                                                                 | D                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               | 25.8                                                                              | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 1.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 64.0%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 7: US 29 & Lake Saponi Drive

05/31/2021

|                                   |  |  |                                                                                    |  |  |                                                                                    |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                                                                                                                 | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                 |
| Lane Configurations               |                                                                                   |  |   |  |                                                                                   |   |
| Traffic Volume (veh/h)            | 0                                                                                 | 36                                                                                | 1915                                                                                                                                                                | 48                                                                                | 0                                                                                 | 905                                                                                                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 36                                                                                | 1915                                                                                                                                                                | 48                                                                                | 0                                                                                 | 905                                                                                                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                                                                                                                |                                                                                   |                                                                                   | Free                                                                                                                                                                |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                                                                                                  |                                                                                   |                                                                                   | 0%                                                                                                                                                                  |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                                                                                                | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 38                                                                                | 2016                                                                                                                                                                | 51                                                                                | 0                                                                                 | 953                                                                                                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Median type                       |                                                                                   |                                                                                   | Raised                                                                                                                                                              |                                                                                   | Raised                                                                            |                                                                                                                                                                     |
| Median storage veh)               |                                                                                   |                                                                                   | 2                                                                                                                                                                   |                                                                                   | 2                                                                                 |                                                                                                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC, conflicting volume            | 2492                                                                              | 1008                                                                              |                                                                                                                                                                     |                                                                                   | 2067                                                                              |                                                                                                                                                                     |
| vC1, stage 1 conf vol             | 2016                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC2, stage 2 conf vol             | 476                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vCu, unblocked vol                | 2492                                                                              | 1008                                                                              |                                                                                                                                                                     |                                                                                   | 2067                                                                              |                                                                                                                                                                     |
| tC, single (s)                    | 6.8                                                                               | 7.0                                                                               |                                                                                                                                                                     |                                                                                   | 4.1                                                                               |                                                                                                                                                                     |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| tF (s)                            | 3.5                                                                               | 3.4                                                                               |                                                                                                                                                                     |                                                                                   | 2.2                                                                               |                                                                                                                                                                     |
| p0 queue free %                   | 100                                                                               | 84                                                                                |                                                                                                                                                                     |                                                                                   | 100                                                                               |                                                                                                                                                                     |
| cM capacity (veh/h)               | 88                                                                                | 232                                                                               |                                                                                                                                                                     |                                                                                   | 274                                                                               |                                                                                                                                                                     |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | NB 2                                                                                                                                                                | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                                                                                                |
| Volume Total                      | 38                                                                                | 1008                                                                              | 1008                                                                                                                                                                | 51                                                                                | 476                                                                               | 476                                                                                                                                                                 |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   |
| Volume Right                      | 38                                                                                | 0                                                                                 | 0                                                                                                                                                                   | 51                                                                                | 0                                                                                 | 0                                                                                                                                                                   |
| cSH                               | 232                                                                               | 1700                                                                              | 1700                                                                                                                                                                | 1700                                                                              | 1700                                                                              | 1700                                                                                                                                                                |
| Volume to Capacity                | 0.16                                                                              | 0.59                                                                              | 0.59                                                                                                                                                                | 0.03                                                                              | 0.28                                                                              | 0.28                                                                                                                                                                |
| Queue Length 95th (ft)            | 14                                                                                | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   |
| Control Delay (s)                 | 23.6                                                                              | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 |
| Lane LOS                          | C                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Approach Delay (s)                | 23.6                                                                              | 0.0                                                                               |                                                                                                                                                                     |                                                                                   | 0.0                                                                               |                                                                                                                                                                     |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Average Delay                     |                                                                                   | 0.3                                                                               |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 62.9%                                                                             |                                                                                                                                                                     | ICU Level of Service                                                              |                                                                                   | B                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 8: US 29 & Greene Edge Lane

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1969                                                                              | 883                                                                               | 1                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1969                                                                              | 883                                                                               | 1                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 2030                                                                              | 910                                                                               | 1                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1928                                                                              | 456                                                                               | 911                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             | 910                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 1017                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1928                                                                              | 456                                                                               | 911                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 237                                                                               | 557                                                                               | 756                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |
| Volume Total                      | 0                                                                                 | 678                                                                               | 1353                                                                              | 607                                                                               | 304                                                                               |                                                                                   |
| Volume Left                       | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 |                                                                                   |
| cSH                               | 1700                                                                              | 756                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.00                                                                              | 0.80                                                                              | 0.36                                                                              | 0.18                                                                              |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Control Delay (s)                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |
| Approach LOS                      | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 58.5%                                                                             | ICU Level of Service                                                              |                                                                                   | B                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

## 9: US 29 &amp; Frays Mill Road

05/31/2021



| Lane Group              | EBT  | WBT  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 62   | 112  | 123  | 2000  | 109  | 34   | 926  | 8    |
| v/c Ratio               | 0.39 | 0.82 | 0.65 | 0.90  | 0.10 | 0.27 | 0.49 | 0.01 |
| Control Delay           | 34.4 | 70.3 | 67.8 | 29.2  | 1.4  | 58.2 | 19.3 | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 34.4 | 70.3 | 67.8 | 29.2  | 1.4  | 58.2 | 19.3 | 0.0  |
| Queue Length 50th (ft)  | 20   | 47   | 92   | ~817  | 0    | 26   | 244  | 0    |
| Queue Length 95th (ft)  | 65   | #150 | 157  | #1021 | 17   | 60   | 309  | 0    |
| Internal Link Dist (ft) | 273  | 256  |      | 1061  |      |      | 946  |      |
| Turn Bay Length (ft)    |      |      | 350  |       | 350  | 375  |      | 375  |
| Base Capacity (vph)     | 168  | 139  | 210  | 2219  | 1063 | 136  | 1892 | 942  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.37 | 0.81 | 0.59 | 0.90  | 0.10 | 0.25 | 0.49 | 0.01 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 9: US 29 & Frays Mill Road

05/31/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 16                                                                                | 11                                                                                | 34                                                                                | 34                                                                                | 9                                                                                 | 67                                                                                | 121                                                                                 | 1960                                                                                | 107                                                                                 | 33                                                                                  | 907                                                                                 | 8                                                                                   |
| Future Volume (vph)               | 16                                                                                | 11                                                                                | 34                                                                                | 34                                                                                | 9                                                                                 | 67                                                                                | 121                                                                                 | 1960                                                                                | 107                                                                                 | 33                                                                                  | 907                                                                                 | 8                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 0.92                                                                              |                                                                                   |                                                                                   | 0.92                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 1678                                                                              |                                                                                   |                                                                                   | 1662                                                                              |                                                                                   | 1787                                                                                | 3539                                                                                | 1615                                                                                | 1805                                                                                | 3471                                                                                | 1615                                                                                |
| Flt Permitted                     |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   | 0.60                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 1488                                                                              |                                                                                   |                                                                                   | 1018                                                                              |                                                                                   | 1787                                                                                | 3539                                                                                | 1615                                                                                | 1805                                                                                | 3471                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                |
| Adj. Flow (vph)                   | 16                                                                                | 11                                                                                | 35                                                                                | 35                                                                                | 9                                                                                 | 68                                                                                | 123                                                                                 | 2000                                                                                | 109                                                                                 | 34                                                                                  | 926                                                                                 | 8                                                                                   |
| RTOR Reduction (vph)              | 0                                                                                 | 33                                                                                | 0                                                                                 | 0                                                                                 | 46                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 44                                                                                  | 0                                                                                   | 0                                                                                   | 4                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 29                                                                                | 0                                                                                 | 0                                                                                 | 66                                                                                | 0                                                                                 | 123                                                                                 | 2000                                                                                | 65                                                                                  | 34                                                                                  | 926                                                                                 | 4                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 9%                                                                                | 3%                                                                                | 6%                                                                                | 11%                                                                               | 1%                                                                                | 1%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 4%                                                                                  | 0%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 8.3                                                                               |                                                                                   |                                                                                   | 10.8                                                                              |                                                                                   | 12.7                                                                                | 71.6                                                                                | 71.6                                                                                | 5.3                                                                                 | 64.2                                                                                | 64.2                                                                                |
| Effective Green, g (s)            |                                                                                   | 8.3                                                                               |                                                                                   |                                                                                   | 10.8                                                                              |                                                                                   | 12.7                                                                                | 71.6                                                                                | 71.6                                                                                | 5.3                                                                                 | 64.2                                                                                | 64.2                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   | 0.09                                                                              |                                                                                   | 0.11                                                                                | 0.60                                                                                | 0.60                                                                                | 0.04                                                                                | 0.54                                                                                | 0.54                                                                                |
| Clearance Time (s)                |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 3.5                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 3.5                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 102                                                                               |                                                                                   |                                                                                   | 91                                                                                |                                                                                   | 189                                                                                 | 2111                                                                                | 963                                                                                 | 79                                                                                  | 1856                                                                                | 864                                                                                 |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.07                                                                               | c0.57                                                                               | 0.04                                                                                | 0.02                                                                                | 0.27                                                                                | 0.00                                                                                |
| v/s Ratio Perm                    |                                                                                   | c0.02                                                                             |                                                                                   |                                                                                   | c0.06                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.29                                                                              |                                                                                   |                                                                                   | 0.72                                                                              |                                                                                   | 0.65                                                                                | 0.95                                                                                | 0.07                                                                                | 0.43                                                                                | 0.50                                                                                | 0.00                                                                                |
| Uniform Delay, d1                 |                                                                                   | 53.0                                                                              |                                                                                   |                                                                                   | 53.1                                                                              |                                                                                   | 51.5                                                                                | 22.5                                                                                | 10.2                                                                                | 55.9                                                                                | 17.7                                                                                | 13.0                                                                                |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 2.1                                                                               |                                                                                   |                                                                                   | 25.8                                                                              |                                                                                   | 8.1                                                                                 | 10.6                                                                                | 0.1                                                                                 | 4.4                                                                                 | 1.0                                                                                 | 0.0                                                                                 |
| Delay (s)                         |                                                                                   | 55.2                                                                              |                                                                                   |                                                                                   | 78.9                                                                              |                                                                                   | 59.6                                                                                | 33.1                                                                                | 10.3                                                                                | 60.3                                                                                | 18.7                                                                                | 13.0                                                                                |
| Level of Service                  |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   | E                                                                                   | C                                                                                   | B                                                                                   | E                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 55.2                                                                              |                                                                                   |                                                                                   | 78.9                                                                              |                                                                                   |                                                                                     | 33.4                                                                                |                                                                                     |                                                                                     | 20.1                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 31.5                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.87                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 24.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 85.0%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 10: US 29 & Dickerson Road

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)            | 23                                                                                | 0                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 34                                                                                  | 2134                                                                                | 2                                                                                   | 1                                                                                   | 935                                                                                 | 14                                                                                  |
| Future Volume (Veh/h)             | 23                                                                                | 0                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 34                                                                                  | 2134                                                                                | 2                                                                                   | 1                                                                                   | 935                                                                                 | 14                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph)            | 24                                                                                | 0                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 35                                                                                  | 2223                                                                                | 2                                                                                   | 1                                                                                   | 974                                                                                 | 15                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     | Raised                                                                              |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2158                                                                              | 3271                                                                              | 487                                                                               | 2794                                                                              | 3285                                                                              | 1112                                                                              | 989                                                                                 | 2225                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 976                                                                               | 976                                                                               |                                                                                   | 2294                                                                              | 2294                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 1182                                                                              | 2295                                                                              |                                                                                   | 500                                                                               | 991                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2158                                                                              | 3271                                                                              | 487                                                                               | 2794                                                                              | 3285                                                                              | 1112                                                                              | 989                                                                                 | 2225                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.7                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.2                                                                                 | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.7                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.6                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.3                                                                                 | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| p0 queue free %                   | 83                                                                                | 100                                                                               | 98                                                                                | 100                                                                               | 100                                                                               | 100                                                                               | 95                                                                                  | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 143                                                                               | 66                                                                                | 532                                                                               | 38                                                                                | 67                                                                                | 206                                                                               | 671                                                                                 | 238                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 35                                                                                | 0                                                                                 | 35                                                                                | 1482                                                                              | 743                                                                               | 1                                                                                 | 487                                                                                 | 487                                                                                 | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 24                                                                                | 0                                                                                 | 35                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 185                                                                               | 1700                                                                              | 671                                                                               | 1700                                                                              | 1700                                                                              | 238                                                                               | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.19                                                                              | 0.00                                                                              | 0.05                                                                              | 0.87                                                                              | 0.44                                                                              | 0.00                                                                              | 0.29                                                                                | 0.29                                                                                | 0.01                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 17                                                                                | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 28.9                                                                              | 0.0                                                                               | 10.7                                                                              | 0.0                                                                               | 0.0                                                                               | 20.2                                                                              | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | D                                                                                 | A                                                                                 | B                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 28.9                                                                              | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | D                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 69.1%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 11: US 29 &amp; Austin Drive

05/31/2021



| Lane Group              | EBL  | EBT  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 10   | 35   | 27   | 2236 | 973  | 22   |
| v/c Ratio               | 0.09 | 0.09 | 0.25 | 0.71 | 0.34 | 0.02 |
| Control Delay           | 55.4 | 0.4  | 58.3 | 5.3  | 6.1  | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 55.4 | 0.4  | 58.3 | 5.3  | 6.1  | 0.0  |
| Queue Length 50th (ft)  | 8    | 0    | 20   | 344  | 148  | 0    |
| Queue Length 95th (ft)  | 26   | 0    | 50   | 435  | 203  | 0    |
| Internal Link Dist (ft) |      | 306  |      | 669  | 657  |      |
| Turn Bay Length (ft)    |      |      | 500  |      |      | 350  |
| Base Capacity (vph)     | 112  | 414  | 174  | 3155 | 2844 | 1224 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.09 | 0.08 | 0.16 | 0.71 | 0.34 | 0.02 |
| Intersection Summary    |      |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 11: US 29 & Austin Drive

05/31/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)              | 10                                                                                | 0                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 26                                                                                  | 2147                                                                                | 0                                                                                   | 0                                                                                   | 934                                                                                 | 21                                                                                  |
| Future Volume (vph)               | 10                                                                                | 0                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 26                                                                                  | 2147                                                                                | 0                                                                                   | 0                                                                                   | 934                                                                                 | 21                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.85                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1805                                                                              | 1568                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1671                                                                                | 3539                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1468                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1805                                                                              | 1568                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1671                                                                                | 3539                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1468                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 10                                                                                | 0                                                                                 | 35                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 27                                                                                  | 2236                                                                                | 0                                                                                   | 0                                                                                   | 973                                                                                 | 22                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 6                                                                                   |
| Lane Group Flow (vph)             | 10                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 27                                                                                  | 2236                                                                                | 0                                                                                   | 0                                                                                   | 973                                                                                 | 16                                                                                  |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 3%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 8%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 10%                                                                                 |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     |                                                                                     | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 4.3                                                                               | 4.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 5.1                                                                                 | 101.2                                                                               |                                                                                     |                                                                                     | 88.6                                                                                | 88.6                                                                                |
| Effective Green, g (s)            | 4.3                                                                               | 4.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 5.1                                                                                 | 101.2                                                                               |                                                                                     |                                                                                     | 88.6                                                                                | 88.6                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.04                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.04                                                                                | 0.84                                                                                |                                                                                     |                                                                                     | 0.74                                                                                | 0.74                                                                                |
| Clearance Time (s)                | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 64                                                                                | 56                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 71                                                                                  | 2984                                                                                |                                                                                     |                                                                                     | 2587                                                                                | 1083                                                                                |
| v/s Ratio Prot                    | c0.01                                                                             | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.02                                                                                | c0.63                                                                               |                                                                                     |                                                                                     | 0.28                                                                                | 0.01                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.16                                                                              | 0.02                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.38                                                                                | 0.75                                                                                |                                                                                     |                                                                                     | 0.38                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 | 56.1                                                                              | 55.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 55.9                                                                                | 4.0                                                                                 |                                                                                     |                                                                                     | 5.7                                                                                 | 4.2                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 1.1                                                                               | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.4                                                                                 | 1.8                                                                                 |                                                                                     |                                                                                     | 0.4                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 57.2                                                                              | 56.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 59.3                                                                                | 5.8                                                                                 |                                                                                     |                                                                                     | 6.1                                                                                 | 4.2                                                                                 |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 56.3                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 6.4                                                                                 |                                                                                     |                                                                                     | 6.1                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.84                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 29.0                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 87.7%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 12: US 29 &amp; Boulders Road

05/31/2021

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 18                                                                                | 23                                                                                | 80                                                                                | 78                                                                                | 78                                                                                | 83                                                                                | 119                                                                                | 2078                                                                                | 13                                                                                  | 5                                                                                   | 957                                                                                 | 33                                                                                  |
| v/c Ratio               | 0.18                                                                              | 0.11                                                                              | 0.35                                                                              | 0.70                                                                              | 0.69                                                                              | 0.34                                                                              | 0.61                                                                               | 0.83                                                                                | 0.01                                                                                | 0.02                                                                                | 0.48                                                                                | 0.03                                                                                |
| Control Delay           | 57.1                                                                              | 54.0                                                                              | 4.2                                                                               | 85.6                                                                              | 84.9                                                                              | 4.1                                                                               | 63.4                                                                               | 18.6                                                                                | 0.0                                                                                 | 53.6                                                                                | 17.8                                                                                | 0.1                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 57.1                                                                              | 54.0                                                                              | 4.2                                                                               | 85.6                                                                              | 84.9                                                                              | 4.1                                                                               | 63.4                                                                               | 18.6                                                                                | 0.0                                                                                 | 53.6                                                                                | 17.8                                                                                | 0.1                                                                                 |
| Queue Length 50th (ft)  | 15                                                                                | 9                                                                                 | 0                                                                                 | 63                                                                                | 63                                                                                | 0                                                                                 | 89                                                                                 | 535                                                                                 | 0                                                                                   | 2                                                                                   | 232                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | 41                                                                                | 24                                                                                | 0                                                                                 | #143                                                                              | #142                                                                              | 3                                                                                 | 146                                                                                | #1029                                                                               | 0                                                                                   | 8                                                                                   | 328                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 179                                                                               |                                                                                   |                                                                                   | 369                                                                               |                                                                                   |                                                                                    | 731                                                                                 |                                                                                     |                                                                                     | 699                                                                                 |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   | 175                                                                               |                                                                                   |                                                                                   | 350                                                                               | 400                                                                                |                                                                                     | 300                                                                                 | 550                                                                                 |                                                                                     | 425                                                                                 |
| Base Capacity (vph)     | 316                                                                               | 639                                                                               | 404                                                                               | 115                                                                               | 116                                                                               | 244                                                                               | 222                                                                                | 2498                                                                                | 1184                                                                                | 542                                                                                 | 1994                                                                                | 957                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.06                                                                              | 0.04                                                                              | 0.20                                                                              | 0.68                                                                              | 0.67                                                                              | 0.34                                                                              | 0.54                                                                               | 0.83                                                                                | 0.01                                                                                | 0.01                                                                                | 0.48                                                                                | 0.03                                                                                |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 12: US 29 & Boulders Road

05/31/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 37                                                                                | 4                                                                                 | 79                                                                                | 143                                                                               | 12                                                                                | 82                                                                                | 118                                                                                 | 2057                                                                                | 13                                                                                  | 5                                                                                   | 947                                                                                 | 33                                                                                  |
| Future Volume (vph)               | 37                                                                                | 4                                                                                 | 79                                                                                | 143                                                                               | 12                                                                                | 82                                                                                | 118                                                                                 | 2057                                                                                | 13                                                                                  | 5                                                                                   | 947                                                                                 | 33                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                 | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 | 0.91                                                                              | 0.91                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 0.97                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1643                                                                              | 3321                                                                              | 1495                                                                              | 1715                                                                              | 1732                                                                              | 1615                                                                              | 1752                                                                                | 3539                                                                                | 1615                                                                                | 3502                                                                                | 3505                                                                                | 1568                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1643                                                                              | 3321                                                                              | 1495                                                                              | 1715                                                                              | 1732                                                                              | 1615                                                                              | 1752                                                                                | 3539                                                                                | 1615                                                                                | 3502                                                                                | 3505                                                                                | 1568                                                                                |
| Peak-hour factor, PHF             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Adj. Flow (vph)                   | 37                                                                                | 4                                                                                 | 80                                                                                | 144                                                                               | 12                                                                                | 83                                                                                | 119                                                                                 | 2078                                                                                | 13                                                                                  | 5                                                                                   | 957                                                                                 | 33                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 76                                                                                | 0                                                                                 | 0                                                                                 | 78                                                                                | 0                                                                                   | 0                                                                                   | 5                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  |
| Lane Group Flow (vph)             | 18                                                                                | 23                                                                                | 4                                                                                 | 78                                                                                | 78                                                                                | 5                                                                                 | 119                                                                                 | 2078                                                                                | 8                                                                                   | 5                                                                                   | 957                                                                                 | 18                                                                                  |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 8%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 3%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 3%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 7.9                                                                               | 7.9                                                                               | 7.9                                                                               | 13.4                                                                                | 78.2                                                                                | 78.2                                                                                | 1.4                                                                                 | 66.9                                                                                | 66.9                                                                                |
| Effective Green, g (s)            | 6.1                                                                               | 6.1                                                                               | 6.1                                                                               | 7.9                                                                               | 7.9                                                                               | 7.9                                                                               | 13.4                                                                                | 78.2                                                                                | 78.2                                                                                | 1.4                                                                                 | 66.9                                                                                | 66.9                                                                                |
| Actuated g/C Ratio                | 0.05                                                                              | 0.05                                                                              | 0.05                                                                              | 0.07                                                                              | 0.07                                                                              | 0.07                                                                              | 0.11                                                                                | 0.65                                                                                | 0.65                                                                                | 0.01                                                                                | 0.56                                                                                | 0.56                                                                                |
| Clearance Time (s)                | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                 | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 83                                                                                | 168                                                                               | 75                                                                                | 112                                                                               | 114                                                                               | 106                                                                               | 195                                                                                 | 2306                                                                                | 1052                                                                                | 40                                                                                  | 1954                                                                                | 874                                                                                 |
| v/s Ratio Prot                    | c0.01                                                                             | 0.01                                                                              | 0.00                                                                              | c0.05                                                                             | 0.05                                                                              | 0.00                                                                              | c0.07                                                                               | c0.59                                                                               | 0.01                                                                                | 0.00                                                                                | 0.27                                                                                | 0.01                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.22                                                                              | 0.14                                                                              | 0.05                                                                              | 0.70                                                                              | 0.68                                                                              | 0.05                                                                              | 0.61                                                                                | 0.90                                                                                | 0.01                                                                                | 0.12                                                                                | 0.49                                                                                | 0.02                                                                                |
| Uniform Delay, d1                 | 54.7                                                                              | 54.4                                                                              | 54.2                                                                              | 54.9                                                                              | 54.8                                                                              | 52.5                                                                              | 50.8                                                                                | 17.6                                                                                | 7.3                                                                                 | 58.7                                                                                | 16.2                                                                                | 11.9                                                                                |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 1.3                                                                               | 0.4                                                                               | 0.3                                                                               | 17.2                                                                              | 15.7                                                                              | 0.2                                                                               | 5.5                                                                                 | 6.2                                                                                 | 0.0                                                                                 | 1.4                                                                                 | 0.9                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 56.0                                                                              | 54.8                                                                              | 54.5                                                                              | 72.0                                                                              | 70.5                                                                              | 52.7                                                                              | 56.4                                                                                | 23.9                                                                                | 7.3                                                                                 | 60.1                                                                                | 17.0                                                                                | 11.9                                                                                |
| Level of Service                  | E                                                                                 | D                                                                                 | D                                                                                 | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | C                                                                                   | A                                                                                   | E                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 54.8                                                                              |                                                                                   |                                                                                   | 64.8                                                                              |                                                                                   |                                                                                     | 25.5                                                                                |                                                                                     |                                                                                     | 17.1                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 26.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.86                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 89.9%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>c Critical Lane Group</b>      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 13: US 29 & Camelot Drive

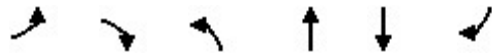
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|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 3                                                                                 | 0                                                                                 | 32                                                                                | 10                                                                                | 0                                                                                 | 14                                                                                | 75                                                                                  | 2164                                                                                | 4                                                                                   | 1                                                                                   | 1175                                                                                | 6                                                                                   |
| Future Volume (Veh/h)             | 3                                                                                 | 0                                                                                 | 32                                                                                | 10                                                                                | 0                                                                                 | 14                                                                                | 75                                                                                  | 2164                                                                                | 4                                                                                   | 1                                                                                   | 1175                                                                                | 6                                                                                   |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Hourly flow rate (vph)            | 3                                                                                 | 0                                                                                 | 34                                                                                | 11                                                                                | 0                                                                                 | 15                                                                                | 81                                                                                  | 2327                                                                                | 4                                                                                   | 1                                                                                   | 1263                                                                                | 6                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2606                                                                              | 3758                                                                              | 632                                                                               | 3156                                                                              | 3760                                                                              | 1164                                                                              | 1269                                                                                |                                                                                     |                                                                                     | 2331                                                                                |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 1265                                                                              | 1265                                                                              |                                                                                   | 2489                                                                              | 2489                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 1340                                                                              | 2493                                                                              |                                                                                   | 668                                                                               | 1271                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2606                                                                              | 3758                                                                              | 632                                                                               | 3156                                                                              | 3760                                                                              | 1164                                                                              | 1269                                                                                |                                                                                     |                                                                                     | 2331                                                                                |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.0                                                                               | 7.5                                                                               | 6.5                                                                               | 7.2                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 97                                                                                | 100                                                                               | 92                                                                                | 57                                                                                | 100                                                                               | 91                                                                                | 85                                                                                  |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 99                                                                                | 47                                                                                | 421                                                                               | 25                                                                                | 46                                                                                | 170                                                                               | 549                                                                                 |                                                                                     |                                                                                     | 216                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 37                                                                                | 26                                                                                | 81                                                                                | 1164                                                                              | 1164                                                                              | 4                                                                                 | 1                                                                                   | 632                                                                                 | 632                                                                                 | 6                                                                                   |                                                                                     |                                                                                     |
| Volume Left                       | 3                                                                                 | 11                                                                                | 81                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 34                                                                                | 15                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 4                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 6                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 333                                                                               | 50                                                                                | 549                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 216                                                                                 | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.11                                                                              | 0.52                                                                              | 0.15                                                                              | 0.68                                                                              | 0.68                                                                              | 0.00                                                                              | 0.00                                                                                | 0.37                                                                                | 0.37                                                                                | 0.00                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 9                                                                                 | 49                                                                                | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 17.2                                                                              | 139.1                                                                             | 12.7                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 21.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | C                                                                                 | F                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 17.2                                                                              | 139.1                                                                             | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 1.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 73.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 14: US 29 &amp; Lewis and Clark Drive

05/31/2021



| Lane Group              | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 155  | 49   | 18   | 2173 | 1209 | 39   |
| v/c Ratio               | 0.67 | 0.22 | 0.22 | 0.80 | 0.48 | 0.03 |
| Control Delay           | 63.5 | 14.6 | 59.1 | 11.6 | 9.4  | 2.8  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 63.5 | 14.6 | 59.1 | 11.6 | 9.4  | 2.8  |
| Queue Length 50th (ft)  | 115  | 0    | 14   | 453  | 148  | 0    |
| Queue Length 95th (ft)  | 183  | 36   | 38   | 627  | 329  | 13   |
| Internal Link Dist (ft) | 654  |      |      | 696  | 637  |      |
| Turn Bay Length (ft)    |      |      | 450  |      |      | 375  |
| Base Capacity (vph)     | 285  | 267  | 96   | 2728 | 2528 | 1142 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.54 | 0.18 | 0.19 | 0.80 | 0.48 | 0.03 |
| Intersection Summary    |      |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 14: US 29 & Lewis and Clark Drive

05/31/2021



| Movement               | EBL   | EBR  | NBL  | NBT   | SBU  | SBT  | SBR  |
|------------------------|-------|------|------|-------|------|------|------|
| Lane Configurations    |       |      |      |       |      |      |      |
| Traffic Volume (vph)   | 149   | 47   | 17   | 2086  | 0    | 1161 | 37   |
| Future Volume (vph)    | 149   | 47   | 17   | 2086  | 0    | 1161 | 37   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 6.0   | 6.0  | 6.0  | 6.0   |      | 6.0  | 6.0  |
| Lane Util. Factor      | 1.00  | 1.00 | 1.00 | 0.95  |      | 0.95 | 1.00 |
| Frt                    | 1.00  | 0.85 | 1.00 | 1.00  |      | 1.00 | 0.85 |
| Flt Protected          | 0.95  | 1.00 | 0.95 | 1.00  |      | 1.00 | 1.00 |
| Satd. Flow (prot)      | 1805  | 1429 | 1280 | 3539  |      | 3505 | 1568 |
| Flt Permitted          | 0.95  | 1.00 | 0.95 | 1.00  |      | 1.00 | 1.00 |
| Satd. Flow (perm)      | 1805  | 1429 | 1280 | 3539  |      | 3505 | 1568 |
| Peak-hour factor, PHF  | 0.96  | 0.96 | 0.96 | 0.96  | 0.92 | 0.96 | 0.96 |
| Adj. Flow (vph)        | 155   | 49   | 18   | 2173  | 0    | 1209 | 39   |
| RTOR Reduction (vph)   | 0     | 43   | 0    | 0     | 0    | 0    | 12   |
| Lane Group Flow (vph)  | 155   | 6    | 18   | 2173  | 0    | 1209 | 27   |
| Heavy Vehicles (%)     | 0%    | 13%  | 41%  | 2%    | 2%   | 3%   | 3%   |
| Turn Type              | Prot  | Prot | Prot | NA    | Prot | NA   | Prot |
| Protected Phases       | 4     | 4    | 5    | 2     | 1    | 6    | 6    |
| Permitted Phases       |       |      |      |       |      |      |      |
| Actuated Green, G (s)  | 15.5  | 15.5 | 3.5  | 92.5  |      | 83.0 | 83.0 |
| Effective Green, g (s) | 15.5  | 15.5 | 3.5  | 92.5  |      | 83.0 | 83.0 |
| Actuated g/C Ratio     | 0.13  | 0.13 | 0.03 | 0.77  |      | 0.69 | 0.69 |
| Clearance Time (s)     | 6.0   | 6.0  | 6.0  | 6.0   |      | 6.0  | 6.0  |
| Vehicle Extension (s)  | 3.5   | 3.5  | 3.5  | 4.0   |      | 4.0  | 4.0  |
| Lane Grp Cap (vph)     | 233   | 184  | 37   | 2727  |      | 2424 | 1084 |
| v/s Ratio Prot         | c0.09 | 0.00 | 0.01 | c0.61 |      | 0.34 | 0.02 |
| v/s Ratio Perm         |       |      |      |       |      |      |      |
| v/c Ratio              | 0.67  | 0.03 | 0.49 | 0.80  |      | 0.50 | 0.02 |
| Uniform Delay, d1      | 49.8  | 45.7 | 57.4 | 8.2   |      | 8.7  | 5.8  |
| Progression Factor     | 1.00  | 1.00 | 1.00 | 1.00  |      | 1.00 | 1.00 |
| Incremental Delay, d2  | 7.3   | 0.1  | 11.4 | 2.5   |      | 0.7  | 0.0  |
| Delay (s)              | 57.0  | 45.8 | 68.8 | 10.7  |      | 9.4  | 5.8  |
| Level of Service       | E     | D    | E    | B     |      | A    | A    |
| Approach Delay (s)     | 54.3  |      |      | 11.2  |      | 9.3  |      |
| Approach LOS           | D     |      |      | B     |      | A    |      |

### Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 13.0  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.82  |                           |      |
| Actuated Cycle Length (s)         | 120.0 | Sum of lost time (s)      | 18.0 |
| Intersection Capacity Utilization | 75.9% | ICU Level of Service      | D    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

# HCM Unsignalized Intersection Capacity Analysis

## 15: US 29 (S) & U-Turn Access

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Traffic Volume (veh/h)            | 17                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1285                                                                              |
| Future Volume (Veh/h)             | 17                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1285                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 18                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1397                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 698                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 698                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 95                                                                                | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)               | 374                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1622                                                                              |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 18                                                                                | 698                                                                               | 698                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 18                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 374                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.05                                                                              | 0.41                                                                              | 0.41                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 4                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 15.1                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 15.1                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 101.0%                                                                            | ICU Level of Service                                                              |                                                                                   | G                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 16: US 29 (N) & U-Turn Access

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 17                                                                                | 2127                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 17                                                                                | 2127                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 18                                                                                | 2312                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1192                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1192                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 99                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 178                                                                               | 1084                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 18                                                                                | 1156                                                                              | 1156                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 18                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.68                                                                              | 0.68                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 101.0%                                                                            |                                                                                   | ICU Level of Service                                                              |                                                                                   | G                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

17: US 29 (S)

05/31/2021

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|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 18                                                                                | 1244                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 18                                                                                | 1244                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 20                                                                                | 1352                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 716                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 716                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 99                                                                                |                                                                                   |
| cM capacity (veh/h)               | 360                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1622                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 20                                                                                | 676                                                                               | 676                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 20                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.40                                                                              | 0.40                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 60.2%                                                                             | ICU Level of Service                                                              |                                                                                   | B                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

18: US 29 (N) & Northside Dr E

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |                                                                                   |  |                                                                                     |  |  |  |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)            | 17                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 0                                                                                   | 1892                                                                                | 2                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (Veh/h)             | 17                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 0                                                                                   | 1892                                                                                | 2                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 18                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 8                                                                                 | 0                                                                                   | 2057                                                                                | 2                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 1036                                                                              | 2059                                                                              | 0                                                                                 | 2057                                                                              | 2057                                                                              | 1028                                                                              | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     | 2059                                                                                |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1036                                                                              | 2059                                                                              | 0                                                                                 | 2057                                                                              | 2057                                                                              | 1028                                                                              | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     | 2059                                                                                |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 90                                                                                | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 97                                                                                | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |
| cM capacity (veh/h)               | 179                                                                               | 54                                                                                | 1084                                                                              | 32                                                                                | 54                                                                                | 231                                                                               | 1622                                                                                |                                                                                     |                                                                                     |                                                                                     | 268                                                                                 |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 18                                                                                | 8                                                                                 | 1028                                                                              | 1028                                                                              | 2                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 18                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 8                                                                                 | 0                                                                                 | 0                                                                                 | 2                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 179                                                                               | 231                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.10                                                                              | 0.03                                                                              | 0.60                                                                              | 0.60                                                                              | 0.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 8                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 27.3                                                                              | 21.1                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 27.3                                                                              | 21.1                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 69.0%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

19: US 29 (S) & Northside Dr W

05/31/2021

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|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |                                                                                         |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                        | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | <br> |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 17                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1240                                                                                                                                                                       | 4                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 17                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1240                                                                                                                                                                       | 4                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                                                                                                            |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                                                                                                            |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                       | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 18                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1348                                                                                                                                                                       | 4                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                                                                                                            |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| vC, conflicting volume            | 1350                                                                              | 1348                                                                              | 674                                                                               | 692                                                                               | 1352                                                                              | 0                                                                                 | 1352                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                          |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| vCu, unblocked vol                | 1350                                                                              | 1348                                                                              | 674                                                                               | 692                                                                               | 1352                                                                              | 0                                                                                 | 1352                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                          |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                                                                                                        |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                                                                                                        |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 95                                                                                | 100                                                                               | 97                                                                                | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 100                                                                                                                                                                        |                                                                                     |
| cM capacity (veh/h)               | 106                                                                               | 150                                                                               | 397                                                                               | 315                                                                               | 149                                                                               | 1084                                                                              | 505                                                                                 |                                                                                     |                                                                                     |                                                                                     | 1622                                                                                                                                                                       |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume Total                      | 18                                                                                | 5                                                                                 | 674                                                                               | 674                                                                               | 4                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume Right                      | 18                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 4                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| cSH                               | 397                                                                               | 149                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume to Capacity                | 0.05                                                                              | 0.03                                                                              | 0.40                                                                              | 0.40                                                                              | 0.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Queue Length 95th (ft)            | 4                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Control Delay (s)                 | 14.5                                                                              | 30.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Lane LOS                          | B                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Approach Delay (s)                | 14.5                                                                              | 30.0                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Approach LOS                      | B                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 55.7%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

20: US 29 (N) & Northside Dr W

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 5                                                                                 | 1894                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 5                                                                                 | 1894                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 5                                                                                 | 2059                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1040                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1040                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 225                                                                               | 1084                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 5                                                                                 | 1030                                                                              | 1030                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 5                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.61                                                                              | 0.61                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 55.7%                                                                             | ICU Level of Service                                                              |                                                                                   | B                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 21: Airport Acres Rd (South) E & US 29 (S)

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 1283                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 1283                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 8                                                                                 | 1395                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 714                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 714                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)               | 364                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1622                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 8                                                                                 | 698                                                                               | 698                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 8                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.41                                                                              | 0.41                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 70.0%                                                                             | ICU Level of Service                                                              |                                                                                   | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 22: Airport Acres Rd (South) E & US 29 (N)

06/07/2021



| Movement                          | EBL  | EBR   | NBL  | NBT                  | SBT  | SBR  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               |      |       |      |                      |      |      |
| Traffic Volume (veh/h)            | 7    | 0     | 0    | 2063                 | 0    | 0    |
| Future Volume (Veh/h)             | 7    | 0     | 0    | 2063                 | 0    | 0    |
| Sign Control                      | Stop |       |      | Free                 | Free |      |
| Grade                             | 0%   |       |      | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92  | 0.92 | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 8    | 0     | 0    | 2242                 | 0    | 0    |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       |      |       |      | None                 | None |      |
| Median storage veh                |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 1121 | 0     | 0    |                      |      |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 1121 | 0     | 0    |                      |      |      |
| tC, single (s)                    | 6.8  | 6.9   | 4.1  |                      |      |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   | 2.2  |                      |      |      |
| p0 queue free %                   | 96   | 100   | 100  |                      |      |      |
| cM capacity (veh/h)               | 200  | 1084  | 1622 |                      |      |      |
| Direction, Lane #                 | EB 1 | NB 1  | NB 2 |                      |      |      |
| Volume Total                      | 8    | 1121  | 1121 |                      |      |      |
| Volume Left                       | 8    | 0     | 0    |                      |      |      |
| Volume Right                      | 0    | 0     | 0    |                      |      |      |
| cSH                               | 200  | 1700  | 1700 |                      |      |      |
| Volume to Capacity                | 0.04 | 0.66  | 0.66 |                      |      |      |
| Queue Length 95th (ft)            | 3    | 0     | 0    |                      |      |      |
| Control Delay (s)                 | 23.7 | 0.0   | 0.0  |                      |      |      |
| Lane LOS                          | C    |       |      |                      |      |      |
| Approach Delay (s)                | 23.7 | 0.0   |      |                      |      |      |
| Approach LOS                      | C    |       |      |                      |      |      |
| Intersection Summary              |      |       |      |                      |      |      |
| Average Delay                     |      | 0.1   |      |                      |      |      |
| Intersection Capacity Utilization |      | 67.0% |      | ICU Level of Service |      | C    |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

23: US 29 (S) & Airport Acres Rd (North) W

05/31/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1279                                                                                | 4                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1279                                                                                | 4                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 8                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1390                                                                                | 4                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 1396                                                                              | 1392                                                                              | 697                                                                               | 695                                                                               | 1394                                                                              | 0                                                                                 | 1394                                                                               |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1396                                                                              | 1392                                                                              | 697                                                                               | 695                                                                               | 1394                                                                              | 0                                                                                 | 1394                                                                               |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 94                                                                                | 100                                                                               | 100                                                                                |                                                                                     |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |
| cM capacity (veh/h)               | 96                                                                                | 141                                                                               | 383                                                                               | 329                                                                               | 140                                                                               | 1084                                                                              | 487                                                                                |                                                                                     |                                                                                     |                                                                                     | 1622                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 0                                                                                 | 8                                                                                 | 927                                                                               | 467                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 4                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 1700                                                                              | 140                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.00                                                                              | 0.06                                                                              | 0.55                                                                              | 0.27                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 32.2                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               | 32.2                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 60.4%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

24: US 29 (N)

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 7                                                                                 | 2063                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 7                                                                                 | 2063                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 8                                                                                 | 2242                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1137                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1137                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 194                                                                               | 1084                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 8                                                                                 | 1121                                                                              | 1121                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 8                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.66                                                                              | 0.66                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 60.4%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | B                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 25: US 29 & Airport Acres Rd South

05/31/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |  |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 1                                                                                 | 7                                                                                 | 19                                                                                | 2082                                                                              | 1286                                                                              | 0                                                                                 |
| Future Volume (Veh/h)             | 1                                                                                 | 7                                                                                 | 19                                                                                | 2082                                                                              | 1286                                                                              | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Hourly flow rate (vph)            | 1                                                                                 | 7                                                                                 | 20                                                                                | 2146                                                                              | 1326                                                                              | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 872                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.52                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 2439                                                                              | 663                                                                               | 1326                                                                              |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             | 1326                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 1113                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1926                                                                              | 663                                                                               | 1326                                                                              |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 7.1                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.4                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 99                                                                                | 98                                                                                | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 194                                                                               | 385                                                                               | 527                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              |
| Volume Total                      | 8                                                                                 | 20                                                                                | 1073                                                                              | 1073                                                                              | 663                                                                               | 663                                                                               |
| Volume Left                       | 1                                                                                 | 20                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Volume Right                      | 7                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| cSH                               | 343                                                                               | 527                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              |
| Volume to Capacity                | 0.02                                                                              | 0.04                                                                              | 0.63                                                                              | 0.63                                                                              | 0.39                                                                              | 0.39                                                                              |
| Queue Length 95th (ft)            | 2                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Control Delay (s)                 | 15.7                                                                              | 12.1                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Lane LOS                          | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 15.7                                                                              | 0.1                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 67.6%                                                                             |                                                                                   | ICU Level of Service                                                              | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

## 26: US 29 &amp; Airport Road

05/31/2021



| Lane Group              | EBL  | EBT  | EBR  | WBL  | WBT  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 122  | 86   | 160  | 117  | 212  | 89   | 1903  | 154  | 160  | 1121 | 89   |
| v/c Ratio               | 0.56 | 0.54 | 0.23 | 0.73 | 0.85 | 0.49 | 1.12  | 0.14 | 0.86 | 0.60 | 0.08 |
| Control Delay           | 69.1 | 69.5 | 9.1  | 83.1 | 67.9 | 69.6 | 95.3  | 1.6  | 95.4 | 22.5 | 1.2  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 69.1 | 69.5 | 9.1  | 83.1 | 67.9 | 69.6 | 95.3  | 1.6  | 95.4 | 22.5 | 1.2  |
| Queue Length 50th (ft)  | 52   | 70   | 5    | 97   | 123  | 38   | ~992  | 0    | 135  | 337  | 0    |
| Queue Length 95th (ft)  | 86   | 126  | 37   | #182 | #247 | 67   | #1130 | 24   | #263 | 407  | 14   |
| Internal Link Dist (ft) |      | 677  |      |      | 627  |      | 911   |      |      | 792  |      |
| Turn Bay Length (ft)    | 425  |      | 450  | 570  |      | 575  |       | 430  | 475  |      | 540  |
| Base Capacity (vph)     | 226  | 172  | 651  | 172  | 269  | 182  | 1698  | 1078 | 188  | 1868 | 1074 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.54 | 0.50 | 0.25 | 0.68 | 0.79 | 0.49 | 1.12  | 0.14 | 0.85 | 0.60 | 0.08 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 26: US 29 & Airport Road

05/31/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 117                                                                               | 83                                                                                | 154                                                                               | 112                                                                               | 67                                                                                | 136                                                                               | 85                                                                                  | 1827                                                                                | 148                                                                                 | 154                                                                                 | 1076                                                                                | 85                                                                                  |
| Future Volume (vph)               | 117                                                                               | 83                                                                                | 154                                                                               | 112                                                                               | 67                                                                                | 136                                                                               | 85                                                                                  | 1827                                                                                | 148                                                                                 | 154                                                                                 | 1076                                                                                | 85                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 10.5                                                                              | 6.7                                                                               | 6.7                                                                               | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                 | 5.7                                                                                 | 5.7                                                                                 | 8.1                                                                                 | 5.7                                                                                 | 5.7                                                                                 |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.88                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.97                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.90                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 3467                                                                              | 1827                                                                              | 2787                                                                              | 1736                                                                              | 1692                                                                              |                                                                                   | 3433                                                                                | 3505                                                                                | 1568                                                                                | 1719                                                                                | 3471                                                                                | 1524                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 3467                                                                              | 1827                                                                              | 2787                                                                              | 1736                                                                              | 1692                                                                              |                                                                                   | 3433                                                                                | 3505                                                                                | 1568                                                                                | 1719                                                                                | 3471                                                                                | 1524                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 122                                                                               | 86                                                                                | 160                                                                               | 117                                                                               | 70                                                                                | 142                                                                               | 89                                                                                  | 1903                                                                                | 154                                                                                 | 160                                                                                 | 1121                                                                                | 89                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 119                                                                               | 0                                                                                 | 57                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 58                                                                                  | 0                                                                                   | 0                                                                                   | 32                                                                                  |
| Lane Group Flow (vph)             | 122                                                                               | 86                                                                                | 41                                                                                | 117                                                                               | 155                                                                               | 0                                                                                 | 89                                                                                  | 1903                                                                                | 96                                                                                  | 160                                                                                 | 1121                                                                                | 57                                                                                  |
| Heavy Vehicles (%)                | 1%                                                                                | 4%                                                                                | 2%                                                                                | 4%                                                                                | 3%                                                                                | 0%                                                                                | 2%                                                                                  | 3%                                                                                  | 3%                                                                                  | 5%                                                                                  | 4%                                                                                  | 6%                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | pt+ov                                                                             | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  | pt+ov                                                                               |
| Protected Phases                  | 7                                                                                 | 4                                                                                 | 4 5                                                                               | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   | 2 3                                                                                 | 1                                                                                   | 6                                                                                   | 6 7                                                                                 |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 8.2                                                                               | 11.4                                                                              | 25.0                                                                              | 12.0                                                                              | 14.9                                                                              |                                                                                   | 6.9                                                                                 | 63.0                                                                                | 80.7                                                                                | 14.0                                                                                | 69.9                                                                                | 83.8                                                                                |
| Effective Green, g (s)            | 8.2                                                                               | 11.4                                                                              | 25.0                                                                              | 12.0                                                                              | 14.9                                                                              |                                                                                   | 6.9                                                                                 | 63.0                                                                                | 80.7                                                                                | 14.0                                                                                | 69.9                                                                                | 83.8                                                                                |
| Actuated g/C Ratio                | 0.06                                                                              | 0.09                                                                              | 0.19                                                                              | 0.09                                                                              | 0.11                                                                              |                                                                                   | 0.05                                                                                | 0.48                                                                                | 0.62                                                                                | 0.11                                                                                | 0.54                                                                                | 0.64                                                                                |
| Clearance Time (s)                | 10.5                                                                              | 6.7                                                                               |                                                                                   | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                 | 5.7                                                                                 |                                                                                     | 8.1                                                                                 | 5.7                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 218                                                                               | 160                                                                               | 535                                                                               | 160                                                                               | 193                                                                               |                                                                                   | 182                                                                                 | 1698                                                                                | 973                                                                                 | 185                                                                                 | 1866                                                                                | 982                                                                                 |
| v/s Ratio Prot                    | 0.04                                                                              | 0.05                                                                              | 0.01                                                                              | c0.07                                                                             | c0.09                                                                             |                                                                                   | 0.03                                                                                | c0.54                                                                               | 0.06                                                                                | c0.09                                                                               | c0.32                                                                               | 0.04                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.56                                                                              | 0.54                                                                              | 0.08                                                                              | 0.73                                                                              | 0.80                                                                              |                                                                                   | 0.49                                                                                | 1.12                                                                                | 0.10                                                                                | 0.86                                                                                | 0.60                                                                                | 0.06                                                                                |
| Uniform Delay, d1                 | 59.1                                                                              | 56.8                                                                              | 43.0                                                                              | 57.4                                                                              | 56.1                                                                              |                                                                                   | 59.8                                                                                | 33.5                                                                                | 10.0                                                                                | 57.1                                                                                | 20.5                                                                                | 8.5                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 3.1                                                                               | 3.4                                                                               | 0.1                                                                               | 15.8                                                                              | 21.1                                                                              |                                                                                   | 2.1                                                                                 | 62.8                                                                                | 0.0                                                                                 | 31.7                                                                                | 1.4                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 62.2                                                                              | 60.2                                                                              | 43.1                                                                              | 73.2                                                                              | 77.2                                                                              |                                                                                   | 61.9                                                                                | 96.3                                                                                | 10.0                                                                                | 88.8                                                                                | 22.0                                                                                | 8.6                                                                                 |
| Level of Service                  | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                   | F                                                                                   | A                                                                                   | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 53.5                                                                              |                                                                                   |                                                                                   | 75.8                                                                              |                                                                                   |                                                                                     | 88.7                                                                                |                                                                                     |                                                                                     | 28.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 65.2                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.05                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 30.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 97.0%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**Attachment C** Future  
No-Build  
Traffic  
Conditions  
Analysis

# HCM Unsignalized Intersection Capacity Analysis

## 1: US 29 & Deerfield Drive

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |  |  |  |  |  |  |  |  |  |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 13                                                                                | 1                                                                                 | 31                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 15                                                                                  | 871                                                                                 | 0                                                                                   | 0                                                                                   | 1518                                                                                | 21                                                                                  |  |  |  |  |  |  |  |  |  |
| Future Volume (Veh/h)             | 13                                                                                | 1                                                                                 | 31                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 15                                                                                  | 871                                                                                 | 0                                                                                   | 0                                                                                   | 1518                                                                                | 21                                                                                  |  |  |  |  |  |  |  |  |  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |  |  |  |  |  |  |  |  |  |
| Hourly flow rate (vph)            | 14                                                                                | 1                                                                                 | 34                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 16                                                                                  | 947                                                                                 | 0                                                                                   | 0                                                                                   | 1650                                                                                | 23                                                                                  |  |  |  |  |  |  |  |  |  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| pX, platoon unblocked             | 0.85                                                                              | 0.85                                                                              |                                                                                   | 0.85                                                                              | 0.85                                                                              | 0.85                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.85                                                                                |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| vC, conflicting volume            | 2156                                                                              | 2629                                                                              | 825                                                                               | 1804                                                                              | 2652                                                                              | 474                                                                               | 1673                                                                                |                                                                                     |                                                                                     | 947                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| vC1, stage 1 conf vol             | 1650                                                                              | 1650                                                                              |                                                                                   | 979                                                                               | 979                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| vC2, stage 2 conf vol             | 506                                                                               | 979                                                                               |                                                                                   | 826                                                                               | 1673                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| vCu, unblocked vol                | 2011                                                                              | 2566                                                                              | 825                                                                               | 1600                                                                              | 2593                                                                              | 42                                                                                | 1673                                                                                |                                                                                     |                                                                                     | 596                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.1                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.3                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.3                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| p0 queue free %                   | 86                                                                                | 99                                                                                | 89                                                                                | 100                                                                               | 100                                                                               | 100                                                                               | 95                                                                                  |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| cM capacity (veh/h)               | 102                                                                               | 142                                                                               | 298                                                                               | 220                                                                               | 126                                                                               | 876                                                                               | 354                                                                                 |                                                                                     |                                                                                     | 846                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Volume Total                      | 49                                                                                | 1                                                                                 | 16                                                                                | 474                                                                               | 474                                                                               | 0                                                                                 | 0                                                                                   | 825                                                                                 | 825                                                                                 | 23                                                                                  |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Volume Left                       | 14                                                                                | 1                                                                                 | 16                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Volume Right                      | 34                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 23                                                                                  |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| cSH                               | 341                                                                               | 220                                                                               | 354                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                                | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Volume to Capacity                | 0.14                                                                              | 0.00                                                                              | 0.05                                                                              | 0.28                                                                              | 0.28                                                                              | 0.00                                                                              | 0.00                                                                                | 0.49                                                                                | 0.49                                                                                | 0.01                                                                                |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Queue Length 95th (ft)            | 12                                                                                | 0                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Control Delay (s)                 | 26.8                                                                              | 21.4                                                                              | 15.7                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Lane LOS                          | D                                                                                 | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Approach Delay (s)                | 26.8                                                                              | 21.4                                                                              | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Approach LOS                      | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| ICU Level of Service              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |
| B                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |  |  |  |  |  |  |  |

## Queues

## 2: US 29 &amp; Matthew Mill Road

07/22/2021



| Lane Group              | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 150   | 216  | 174  | 178  | 57   | 84   | 712  | 99   | 68   | 1570 | 21   |
| v/c Ratio               | 0.94  | 0.62 | 0.91 | 0.92 | 0.18 | 0.75 | 0.48 | 0.13 | 0.52 | 0.98 | 0.03 |
| Control Delay           | 106.7 | 21.5 | 93.5 | 96.6 | 1.2  | 79.2 | 33.2 | 6.3  | 62.4 | 47.7 | 0.1  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 106.7 | 21.5 | 93.5 | 96.6 | 1.2  | 79.2 | 33.2 | 6.3  | 62.4 | 47.7 | 0.1  |
| Queue Length 50th (ft)  | 107   | 34   | 129  | 132  | 0    | 56   | 236  | 10   | 46   | 557  | 0    |
| Queue Length 95th (ft)  | #234  | 112  | #266 | #274 | 0    | #136 | 297  | 28   | 93   | #733 | 0    |
| Internal Link Dist (ft) | 263   |      |      | 737  |      |      | 534  |      |      | 690  |      |
| Turn Bay Length (ft)    |       |      | 600  |      | 575  | 300  |      | 355  | 625  |      |      |
| Base Capacity (vph)     | 159   | 347  | 192  | 193  | 320  | 112  | 1492 | 784  | 145  | 1605 | 784  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.94  | 0.62 | 0.91 | 0.92 | 0.18 | 0.75 | 0.48 | 0.13 | 0.47 | 0.98 | 0.03 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 2: US 29 & Matthew Mill Road

07/22/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 91                                                                                | 47                                                                                | 199                                                                               | 291                                                                               | 33                                                                                | 52                                                                                | 77                                                                                  | 655                                                                                 | 91                                                                                  | 63                                                                                  | 1444                                                                                | 19                                                                                  |
| Future Volume (vph)               | 91                                                                                | 47                                                                                | 199                                                                               | 291                                                                               | 33                                                                                | 52                                                                                | 77                                                                                  | 655                                                                                 | 91                                                                                  | 63                                                                                  | 1444                                                                                | 19                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 0.97                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 1746                                                                              | 1599                                                                              | 1698                                                                              | 1702                                                                              | 1538                                                                              | 1770                                                                                | 3223                                                                                | 1509                                                                                | 1597                                                                                | 3505                                                                                | 1524                                                                                |
| Flt Permitted                     |                                                                                   | 0.69                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 1247                                                                              | 1599                                                                              | 1698                                                                              | 1702                                                                              | 1538                                                                              | 1770                                                                                | 3223                                                                                | 1509                                                                                | 1597                                                                                | 3505                                                                                | 1524                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 99                                                                                | 51                                                                                | 216                                                                               | 316                                                                               | 36                                                                                | 57                                                                                | 84                                                                                  | 712                                                                                 | 99                                                                                  | 68                                                                                  | 1570                                                                                | 21                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 143                                                                               | 0                                                                                 | 0                                                                                 | 51                                                                                | 0                                                                                   | 0                                                                                   | 54                                                                                  | 0                                                                                   | 0                                                                                   | 11                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 150                                                                               | 73                                                                                | 174                                                                               | 178                                                                               | 6                                                                                 | 84                                                                                  | 712                                                                                 | 45                                                                                  | 68                                                                                  | 1570                                                                                | 10                                                                                  |
| Heavy Vehicles (%)                | 6%                                                                                | 4%                                                                                | 1%                                                                                | 1%                                                                                | 6%                                                                                | 5%                                                                                | 2%                                                                                  | 12%                                                                                 | 7%                                                                                  | 13%                                                                                 | 3%                                                                                  | 6%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  |                                                                                   | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 14.1                                                                              | 14.1                                                                              | 12.5                                                                              | 12.5                                                                              | 12.5                                                                              | 7.0                                                                                 | 49.7                                                                                | 49.7                                                                                | 7.7                                                                                 | 50.4                                                                                | 50.4                                                                                |
| Effective Green, g (s)            |                                                                                   | 14.1                                                                              | 14.1                                                                              | 12.5                                                                              | 12.5                                                                              | 12.5                                                                              | 7.0                                                                                 | 49.7                                                                                | 49.7                                                                                | 7.7                                                                                 | 50.4                                                                                | 50.4                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.13                                                                              | 0.13                                                                              | 0.11                                                                              | 0.11                                                                              | 0.11                                                                              | 0.06                                                                                | 0.45                                                                                | 0.45                                                                                | 0.07                                                                                | 0.46                                                                                | 0.46                                                                                |
| Clearance Time (s)                |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 159                                                                               | 204                                                                               | 192                                                                               | 193                                                                               | 174                                                                               | 112                                                                                 | 1456                                                                                | 681                                                                                 | 111                                                                                 | 1605                                                                                | 698                                                                                 |
| v/s Ratio Prot                    |                                                                                   |                                                                                   | 0.05                                                                              | 0.10                                                                              | c0.10                                                                             | 0.00                                                                              | c0.05                                                                               | 0.22                                                                                | 0.03                                                                                | 0.04                                                                                | c0.45                                                                               | 0.01                                                                                |
| v/s Ratio Perm                    | c0.12                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.94                                                                              | 0.36                                                                              | 0.91                                                                              | 0.92                                                                              | 0.04                                                                              | 0.75                                                                                | 0.49                                                                                | 0.07                                                                                | 0.61                                                                                | 0.98                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 |                                                                                   | 47.6                                                                              | 43.8                                                                              | 48.2                                                                              | 48.3                                                                              | 43.4                                                                              | 50.6                                                                                | 21.2                                                                                | 17.0                                                                                | 49.7                                                                                | 29.3                                                                                | 16.2                                                                                |
| Progression Factor                |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.83                                                                                | 1.49                                                                                | 12.57                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 54.4                                                                              | 1.1                                                                               | 39.4                                                                              | 43.2                                                                              | 0.1                                                                               | 23.6                                                                                | 1.1                                                                                 | 0.2                                                                                 | 9.6                                                                                 | 17.8                                                                                | 0.0                                                                                 |
| Delay (s)                         |                                                                                   | 102.0                                                                             | 44.9                                                                              | 87.5                                                                              | 91.5                                                                              | 43.5                                                                              | 65.4                                                                                | 32.8                                                                                | 214.3                                                                               | 59.3                                                                                | 47.1                                                                                | 16.3                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 | D                                                                                 | E                                                                                 | C                                                                                   | F                                                                                   | E                                                                                   | D                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 68.3                                                                              |                                                                                   |                                                                                   | 83.1                                                                              |                                                                                   |                                                                                     | 55.9                                                                                |                                                                                     |                                                                                     | 47.2                                                                                |                                                                                     |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | E                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 56.3                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.94                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 77.8%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>c Critical Lane Group</b>      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 3: US 29 &amp; Heatherton Drive

07/22/2021



| Lane Group              | EBT  | EBR  | WBR  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 5    | 49   | 21   | 76   | 897  | 2031 | 5    |
| v/c Ratio               | 0.05 | 0.25 | 0.07 | 0.46 | 0.31 | 0.74 | 0.00 |
| Control Delay           | 0.0  | 3.1  | 0.4  | 48.1 | 1.3  | 3.4  | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.4  | 0.0  |
| Total Delay             | 0.0  | 3.1  | 0.4  | 48.1 | 1.3  | 3.9  | 0.0  |
| Queue Length 50th (ft)  | 0    | 0    | 0    | 54   | 25   | 62   | 0    |
| Queue Length 95th (ft)  | 0    | 0    | 0    | m89  | m65  | m92  | m0   |
| Internal Link Dist (ft) | 96   |      |      |      | 1998 | 534  |      |
| Turn Bay Length (ft)    |      |      |      | 550  |      |      |      |
| Base Capacity (vph)     | 104  | 367  | 473  | 169  | 2931 | 2738 | 1275 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 270  | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.05 | 0.13 | 0.04 | 0.45 | 0.31 | 0.82 | 0.00 |

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 3: US 29 & Heatherton Drive

07/22/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)              | 0                                                                                 | 0                                                                                 | 51                                                                                | 0                                                                                 | 0                                                                                 | 20                                                                                | 72                                                                                  | 823                                                                                 | 29                                                                                  | 0                                                                                   | 1929                                                                                | 5                                                                                   |
| Future Volume (vph)               | 0                                                                                 | 0                                                                                 | 51                                                                                | 0                                                                                 | 0                                                                                 | 20                                                                                | 72                                                                                  | 823                                                                                 | 29                                                                                  | 0                                                                                   | 1929                                                                                | 5                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 4.0                                                                               | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 0.86                                                                              | 0.86                                                                              |                                                                                   |                                                                                   | 0.86                                                                              | 1.00                                                                                | 0.99                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 0                                                                                 | 1644                                                                              |                                                                                   |                                                                                   | 1644                                                                              | 1805                                                                                | 3275                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1615                                                                                |
| Flt Permitted                     |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 0                                                                                 | 1644                                                                              |                                                                                   |                                                                                   | 1644                                                                              | 1805                                                                                | 3275                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 0                                                                                 | 0                                                                                 | 54                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 76                                                                                  | 866                                                                                 | 31                                                                                  | 0                                                                                   | 2031                                                                                | 5                                                                                   |
| RTOR Reduction (vph)              | 0                                                                                 | 5                                                                                 | 47                                                                                | 0                                                                                 | 0                                                                                 | 20                                                                                | 0                                                                                   | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 2                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 76                                                                                  | 896                                                                                 | 0                                                                                   | 0                                                                                   | 2031                                                                                | 4                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                  | 10%                                                                                 | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 0%                                                                                  |
| Turn Type                         |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   |                                                                                   | Perm                                                                              | Prot                                                                                | NA                                                                                  |                                                                                     |                                                                                     | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             |                                                                                   | 0.0                                                                               | 4.4                                                                               |                                                                                   |                                                                                   | 4.4                                                                               | 8.9                                                                                 | 96.6                                                                                |                                                                                     |                                                                                     | 83.2                                                                                | 83.2                                                                                |
| Effective Green, g (s)            |                                                                                   | 0.0                                                                               | 4.4                                                                               |                                                                                   |                                                                                   | 4.4                                                                               | 8.9                                                                                 | 96.6                                                                                |                                                                                     |                                                                                     | 83.2                                                                                | 83.2                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.00                                                                              | 0.04                                                                              |                                                                                   |                                                                                   | 0.04                                                                              | 0.08                                                                                | 0.88                                                                                |                                                                                     |                                                                                     | 0.76                                                                                | 0.76                                                                                |
| Clearance Time (s)                |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |
| Vehicle Extension (s)             |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 0                                                                                 | 65                                                                                |                                                                                   |                                                                                   | 65                                                                                | 146                                                                                 | 2876                                                                                |                                                                                     |                                                                                     | 2651                                                                                | 1221                                                                                |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.04                                                                               | 0.27                                                                                |                                                                                     |                                                                                     | c0.58                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                |
| v/c Ratio                         |                                                                                   | 0.00                                                                              | 0.03                                                                              |                                                                                   |                                                                                   | 0.01                                                                              | 0.52                                                                                | 0.31                                                                                |                                                                                     |                                                                                     | 0.77                                                                                | 0.00                                                                                |
| Uniform Delay, d1                 |                                                                                   | 55.0                                                                              | 50.7                                                                              |                                                                                   |                                                                                   | 50.7                                                                              | 48.5                                                                                | 1.1                                                                                 |                                                                                     |                                                                                     | 7.8                                                                                 | 3.3                                                                                 |
| Progression Factor                |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.85                                                                                | 0.96                                                                                |                                                                                     |                                                                                     | 0.30                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 0.0                                                                               | 0.2                                                                               |                                                                                   |                                                                                   | 0.1                                                                               | 3.1                                                                                 | 0.3                                                                                 |                                                                                     |                                                                                     | 0.8                                                                                 | 0.0                                                                                 |
| Delay (s)                         |                                                                                   | 55.0                                                                              | 50.9                                                                              |                                                                                   |                                                                                   | 50.8                                                                              | 44.4                                                                                | 1.3                                                                                 |                                                                                     |                                                                                     | 3.1                                                                                 | 3.3                                                                                 |
| Level of Service                  |                                                                                   | D                                                                                 | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 | D                                                                                   | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 51.3                                                                              |                                                                                   |                                                                                   | 50.8                                                                              |                                                                                   |                                                                                     | 4.7                                                                                 |                                                                                     |                                                                                     | 3.1                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.71                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 13.5                                                                                |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 65.0%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 4: US 29 & Terrace Greene Circle

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |                                                                                      |  |  |                                                                                      |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |   |  |  |   |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 87                                                                                | 0                                                                                   | 759                                                                                                                                                                     | 15                                                                                  | 0                                                                                   | 2028                                                                                                                                                                    | 5                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 87                                                                                | 0                                                                                   | 759                                                                                                                                                                     | 15                                                                                  | 0                                                                                   | 2028                                                                                                                                                                    | 5                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         | Free                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                                                                                                         | 0%                                                                                  |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                                | 0.97                                                                                                                                                                    | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                                                                                                    | 0.97                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 90                                                                                | 0                                                                                   | 782                                                                                                                                                                     | 15                                                                                  | 0                                                                                   | 2091                                                                                                                                                                    | 5                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                                                                                                         |                                                                                     | Raised                                                                              |                                                                                                                                                                         |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                                                                                                         |                                                                                     | 2                                                                                   |                                                                                                                                                                         |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC, conflicting volume            | 2572                                                                              | 2888                                                                              | 1046                                                                              | 1830                                                                              | 2878                                                                              | 391                                                                               | 2096                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     | 797                                                                                                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 2091                                                                              | 2091                                                                              |                                                                                   | 782                                                                               | 782                                                                               |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC2, stage 2 conf vol             | 481                                                                               | 797                                                                               |                                                                                   | 1048                                                                              | 2096                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vCu, unblocked vol                | 2572                                                                              | 2888                                                                              | 1046                                                                              | 1830                                                                              | 2878                                                                              | 391                                                                               | 2096                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     | 797                                                                                                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.6                                                                               | 7.5                                                                               | 6.5                                                                               | 7.0                                                                               | 4.1                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 4.1                                                                                                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.6                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 2.2                                                                                                                                                                     |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 98                                                                                | 100                                                                               | 100                                                                               | 85                                                                                | 100                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 100                                                                                                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 53                                                                                | 90                                                                                | 179                                                                               | 200                                                                               | 88                                                                                | 605                                                                               | 267                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     | 827                                                                                                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                                                                                                    | SB 4                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Total                      | 3                                                                                 | 90                                                                                | 391                                                                               | 391                                                                               | 15                                                                                | 0                                                                                 | 1046                                                                                | 1046                                                                                                                                                                    | 5                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Right                      | 3                                                                                 | 90                                                                                | 0                                                                                 | 0                                                                                 | 15                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 5                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| cSH                               | 179                                                                               | 605                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                                | 1700                                                                                                                                                                    | 1700                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume to Capacity                | 0.02                                                                              | 0.15                                                                              | 0.23                                                                              | 0.23                                                                              | 0.01                                                                              | 0.00                                                                              | 0.61                                                                                | 0.61                                                                                                                                                                    | 0.00                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Queue Length 95th (ft)            | 1                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Control Delay (s)                 | 25.5                                                                              | 12.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane LOS                          | D                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay (s)                | 25.5                                                                              | 12.0                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                      | D                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 66.1%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         | C                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 5: US 29 & Keleigh Lane

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
|                                   |  |  |  |  |  |  |      |
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |      |
| Lane Configurations               |  |                                                                                   |  |  |  |  |      |
| Traffic Volume (veh/h)            | 13                                                                                | 33                                                                                | 9                                                                                 | 670                                                                               | 1872                                                                              | 9                                                                                 |      |
| Future Volume (Veh/h)             | 13                                                                                | 33                                                                                | 9                                                                                 | 670                                                                               | 1872                                                                              | 9                                                                                 |      |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |      |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |      |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              |      |
| Hourly flow rate (vph)            | 14                                                                                | 35                                                                                | 9                                                                                 | 705                                                                               | 1971                                                                              | 9                                                                                 |      |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |      |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |      |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC, conflicting volume            | 2342                                                                              | 986                                                                               | 1980                                                                              |                                                                                   |                                                                                   |                                                                                   |      |
| vC1, stage 1 conf vol             | 1971                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC2, stage 2 conf vol             | 370                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vCu, unblocked vol                | 2342                                                                              | 986                                                                               | 1980                                                                              |                                                                                   |                                                                                   |                                                                                   |      |
| tC, single (s)                    | 6.8                                                                               | 7.0                                                                               | 4.3                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.3                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| p0 queue free %                   | 85                                                                                | 86                                                                                | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |      |
| cM capacity (veh/h)               | 94                                                                                | 245                                                                               | 256                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3 |
| Volume Total                      | 49                                                                                | 9                                                                                 | 352                                                                               | 352                                                                               | 986                                                                               | 986                                                                               | 9    |
| Volume Left                       | 14                                                                                | 9                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Volume Right                      | 35                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 9    |
| cSH                               | 168                                                                               | 256                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700 |
| Volume to Capacity                | 0.29                                                                              | 0.04                                                                              | 0.21                                                                              | 0.21                                                                              | 0.58                                                                              | 0.58                                                                              | 0.01 |
| Queue Length 95th (ft)            | 29                                                                                | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Control Delay (s)                 | 35.1                                                                              | 19.6                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Lane LOS                          | E                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Approach Delay (s)                | 35.1                                                                              | 0.2                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |      |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Average Delay                     |                                                                                   |                                                                                   | 0.7                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 61.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | B    |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |      |

# HCM Unsignalized Intersection Capacity Analysis

## 6: US 29 & Commercial Entrance

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |  |   |  |  |  |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 13                                                                                | 22                                                                                  | 540                                                                                 | 25                                                                                  | 73                                                                                  | 1769                                                                                | 0                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 55                                                                                | 0                                                                                 | 13                                                                                | 22                                                                                  | 540                                                                                 | 25                                                                                  | 73                                                                                  | 1769                                                                                | 0                                                                                   |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 60                                                                                | 0                                                                                 | 14                                                                                | 24                                                                                  | 587                                                                                 | 27                                                                                  | 79                                                                                  | 1923                                                                                | 0                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2422                                                                              | 2743                                                                              | 962                                                                               | 1754                                                                              | 2716                                                                              | 294                                                                               | 1923                                                                                |                                                                                     |                                                                                     | 614                                                                                 |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 2081                                                                              | 2081                                                                              |                                                                                   | 635                                                                               | 635                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 342                                                                               | 662                                                                               |                                                                                   | 1120                                                                              | 2081                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2422                                                                              | 2743                                                                              | 962                                                                               | 1754                                                                              | 2716                                                                              | 294                                                                               | 1923                                                                                |                                                                                     |                                                                                     | 614                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 7.1                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.2                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 64                                                                                | 100                                                                               | 98                                                                                | 92                                                                                  |                                                                                     |                                                                                     | 92                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 50                                                                                | 84                                                                                | 260                                                                               | 165                                                                               | 62                                                                                | 685                                                                               | 311                                                                                 |                                                                                     |                                                                                     | 955                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 0                                                                                 | 74                                                                                | 24                                                                                | 294                                                                               | 294                                                                               | 27                                                                                | 79                                                                                  | 962                                                                                 | 962                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 60                                                                                | 24                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 79                                                                                  | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 27                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 1700                                                                              | 203                                                                               | 311                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 955                                                                                 | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.00                                                                              | 0.36                                                                              | 0.08                                                                              | 0.17                                                                              | 0.17                                                                              | 0.02                                                                              | 0.08                                                                                | 0.57                                                                                | 0.57                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 39                                                                                | 6                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 33.4                                                                              | 17.5                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 9.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | A                                                                                 | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               | 33.4                                                                              | 0.7                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 65.6%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 7: US 29 & Lake Saponi Drive

07/22/2021

|                                   |  |  |                                                                                    |  |  |                                                                                    |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                                                                                                                 | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                 |
| Lane Configurations               |                                                                                   |  |   |  |                                                                                   |   |
| Traffic Volume (veh/h)            | 0                                                                                 | 44                                                                                | 629                                                                                                                                                                 | 15                                                                                | 0                                                                                 | 2151                                                                                                                                                                |
| Future Volume (Veh/h)             | 0                                                                                 | 44                                                                                | 629                                                                                                                                                                 | 15                                                                                | 0                                                                                 | 2151                                                                                                                                                                |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                                                                                                                |                                                                                   |                                                                                   | Free                                                                                                                                                                |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                                                                                                  |                                                                                   |                                                                                   | 0%                                                                                                                                                                  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 48                                                                                | 684                                                                                                                                                                 | 16                                                                                | 0                                                                                 | 2338                                                                                                                                                                |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Median type                       |                                                                                   |                                                                                   | Raised                                                                                                                                                              |                                                                                   | Raised                                                                            |                                                                                                                                                                     |
| Median storage veh)               |                                                                                   |                                                                                   | 2                                                                                                                                                                   |                                                                                   | 2                                                                                 |                                                                                                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC, conflicting volume            | 1853                                                                              | 342                                                                               |                                                                                                                                                                     |                                                                                   | 700                                                                               |                                                                                                                                                                     |
| vC1, stage 1 conf vol             | 684                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vC2, stage 2 conf vol             | 1169                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| vCu, unblocked vol                | 1853                                                                              | 342                                                                               |                                                                                                                                                                     |                                                                                   | 700                                                                               |                                                                                                                                                                     |
| tC, single (s)                    | 6.8                                                                               | 7.1                                                                               |                                                                                                                                                                     |                                                                                   | 4.1                                                                               |                                                                                                                                                                     |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| tF (s)                            | 3.5                                                                               | 3.4                                                                               |                                                                                                                                                                     |                                                                                   | 2.2                                                                               |                                                                                                                                                                     |
| p0 queue free %                   | 100                                                                               | 92                                                                                |                                                                                                                                                                     |                                                                                   | 100                                                                               |                                                                                                                                                                     |
| cM capacity (veh/h)               | 229                                                                               | 637                                                                               |                                                                                                                                                                     |                                                                                   | 906                                                                               |                                                                                                                                                                     |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | NB 2                                                                                                                                                                | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                                                                                                |
| Volume Total                      | 48                                                                                | 342                                                                               | 342                                                                                                                                                                 | 16                                                                                | 1169                                                                              | 1169                                                                                                                                                                |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   |
| Volume Right                      | 48                                                                                | 0                                                                                 | 0                                                                                                                                                                   | 16                                                                                | 0                                                                                 | 0                                                                                                                                                                   |
| cSH                               | 637                                                                               | 1700                                                                              | 1700                                                                                                                                                                | 1700                                                                              | 1700                                                                              | 1700                                                                                                                                                                |
| Volume to Capacity                | 0.08                                                                              | 0.20                                                                              | 0.20                                                                                                                                                                | 0.01                                                                              | 0.69                                                                              | 0.69                                                                                                                                                                |
| Queue Length 95th (ft)            | 6                                                                                 | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   |
| Control Delay (s)                 | 11.1                                                                              | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 |
| Lane LOS                          | B                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Approach Delay (s)                | 11.1                                                                              | 0.0                                                                               |                                                                                                                                                                     |                                                                                   | 0.0                                                                               |                                                                                                                                                                     |
| Approach LOS                      | B                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Average Delay                     |                                                                                   | 0.2                                                                               |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 62.8%                                                                             |                                                                                                                                                                     | ICU Level of Service                                                              |                                                                                   | B                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 8: US 29 & Greene Edge Lane

08/10/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                  | 726                                                                                 | 0                                                                                   | 8                                                                                   | 2236                                                                                | 0                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                  | 726                                                                                 | 0                                                                                   | 8                                                                                   | 2236                                                                                | 0                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                               |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                 |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                  | 789                                                                                 | 0                                                                                   | 9                                                                                   | 2430                                                                                | 0                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                             |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2844                                                                              | 3239                                                                              | 1215                                                                              | 2025                                                                              | 3239                                                                              | 394                                                                               | 2430                                                                               |                                                                                     |                                                                                     |                                                                                     | 789                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 2448                                                                              | 2448                                                                              | 791                                                                               |                                                                                   | 791                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 396                                                                               | 791                                                                               | 1234                                                                              |                                                                                   | 2448                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2844                                                                              | 3239                                                                              | 1215                                                                              | 2025                                                                              | 3239                                                                              | 394                                                                               | 2430                                                                               |                                                                                     |                                                                                     |                                                                                     | 789                                                                                 |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               | 6.5                                                                               |                                                                                   | 5.5                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 99                                                                                | 100                                                                               | 100                                                                               | 100                                                                               | 99                                                                                 |                                                                                     |                                                                                     |                                                                                     | 99                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 31                                                                                | 58                                                                                | 176                                                                               | 159                                                                               | 57                                                                                | 605                                                                               | 197                                                                                |                                                                                     |                                                                                     |                                                                                     | 827                                                                                 |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 1                                                                                 | 264                                                                               | 526                                                                               | 1224                                                                              | 1215                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 1                                                                                 | 0                                                                                 | 9                                                                                 | 0                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 176                                                                               | 197                                                                               | 1700                                                                              | 827                                                                               | 1700                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.01                                                                              | 0.01                                                                              | 0.31                                                                              | 0.01                                                                              | 0.71                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 25.5                                                                              | 0.2                                                                               | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | D                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 25.5                                                                              | 0.1                                                                               | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | Err%                                                                              |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     | H                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 9: US 29 &amp; Frays Mill Road

07/22/2021



| Lane Group              | EBT  | WBT   | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-------------------------|------|-------|------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 274  | 230   | 12   | 732  | 32   | 47   | 2493  | 17   |
| v/c Ratio               | 0.77 | 2.95  | 0.09 | 0.69 | 0.06 | 0.38 | 1.77  | 0.02 |
| Control Delay           | 23.6 | 927.5 | 42.2 | 44.2 | 2.0  | 52.5 | 374.2 | 0.1  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 23.6 | 927.5 | 42.2 | 44.2 | 2.0  | 52.5 | 374.2 | 0.1  |
| Queue Length 50th (ft)  | 17   | ~231  | 7    | 277  | 0    | 31   | ~1389 | 0    |
| Queue Length 95th (ft)  | #135 | #390  | 27   | 341  | 8    | m53  | #1707 | m0   |
| Internal Link Dist (ft) | 875  | 1084  |      | 5794 |      |      | 2491  |      |
| Turn Bay Length (ft)    |      |       | 350  |      | 350  | 375  |       | 375  |
| Base Capacity (vph)     | 358  | 78    | 131  | 1058 | 553  | 123  | 1408  | 738  |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0     | 0    | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.77 | 2.95  | 0.09 | 0.69 | 0.06 | 0.38 | 1.77  | 0.02 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 9: US 29 & Frays Mill Road

07/22/2021

|                                   |  |       |        |      |        |      |                           |      |      |       |       |      |
|-----------------------------------|------------------------------------------------------------------------------------|-------|--------|------|--------|------|---------------------------|------|------|-------|-------|------|
| Movement                          | EBL                                                                                | EBT   | EBR    | WBL  | WBT    | WBR  | NBL                       | NBT  | NBR  | SBL   | SBT   | SBR  |
| Lane Configurations               |                                                                                    | ↔     |        |      | ↔      |      | ↗                         | ↗    | ↗    | ↗     | ↗     | ↗    |
| Traffic Volume (vph)              | 15                                                                                 | 9     | 228    | 154  | 9      | 49   | 11                        | 673  | 29   | 43    | 2294  | 16   |
| Future Volume (vph)               | 15                                                                                 | 9     | 228    | 154  | 9      | 49   | 11                        | 673  | 29   | 43    | 2294  | 16   |
| Ideal Flow (vphpl)                | 1900                                                                               | 1900  | 1900   | 1900 | 1900   | 1900 | 1900                      | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)               |                                                                                    | 6.0   |        |      | 6.0    |      | 6.0                       | 6.0  | 6.0  | 6.0   | 6.0   | 6.0  |
| Lane Util. Factor                 |                                                                                    | 1.00  |        |      | 1.00   |      | 1.00                      | 0.95 | 1.00 | 1.00  | 0.95  | 1.00 |
| Frt                               |                                                                                    | 0.88  |        |      | 0.97   |      | 1.00                      | 1.00 | 0.85 | 1.00  | 1.00  | 0.85 |
| Flt Protected                     |                                                                                    | 1.00  |        |      | 0.96   |      | 0.95                      | 1.00 | 1.00 | 0.95  | 1.00  | 1.00 |
| Satd. Flow (prot)                 |                                                                                    | 1525  |        |      | 1756   |      | 1805                      | 3252 | 1392 | 1703  | 3505  | 1615 |
| Flt Permitted                     |                                                                                    | 0.96  |        |      | 0.12   |      | 0.95                      | 1.00 | 1.00 | 0.95  | 1.00  | 1.00 |
| Satd. Flow (perm)                 |                                                                                    | 1465  |        |      | 217    |      | 1805                      | 3252 | 1392 | 1703  | 3505  | 1615 |
| Peak-hour factor, PHF             | 0.92                                                                               | 0.92  | 0.92   | 0.92 | 0.92   | 0.92 | 0.92                      | 0.92 | 0.92 | 0.92  | 0.92  | 0.92 |
| Adj. Flow (vph)                   | 16                                                                                 | 10    | 248    | 167  | 10     | 53   | 12                        | 732  | 32   | 47    | 2493  | 17   |
| RTOR Reduction (vph)              | 0                                                                                  | 225   | 0      | 0    | 10     | 0    | 0                         | 0    | 22   | 0     | 0     | 11   |
| Lane Group Flow (vph)             | 0                                                                                  | 49    | 0      | 0    | 220    | 0    | 12                        | 732  | 10   | 47    | 2493  | 6    |
| Heavy Vehicles (%)                | 0%                                                                                 | 0%    | 10%    | 0%   | 0%     | 5%   | 0%                        | 11%  | 16%  | 6%    | 3%    | 0%   |
| Turn Type                         | Perm                                                                               | NA    |        | Perm | NA     |      | Prot                      | NA   | Prot | Prot  | NA    | Prot |
| Protected Phases                  |                                                                                    | 4     |        |      | 3      |      | 5                         | 2    | 2    | 1     | 6     | 6    |
| Permitted Phases                  | 4                                                                                  |       |        | 3    |        |      |                           |      |      |       |       |      |
| Actuated Green, G (s)             |                                                                                    | 10.0  |        |      | 35.0   |      | 1.6                       | 34.6 | 34.6 | 6.4   | 39.4  | 39.4 |
| Effective Green, g (s)            |                                                                                    | 10.0  |        |      | 35.0   |      | 1.6                       | 34.6 | 34.6 | 6.4   | 39.4  | 39.4 |
| Actuated g/C Ratio                |                                                                                    | 0.09  |        |      | 0.32   |      | 0.01                      | 0.31 | 0.31 | 0.06  | 0.36  | 0.36 |
| Clearance Time (s)                |                                                                                    | 6.0   |        |      | 6.0    |      | 6.0                       | 6.0  | 6.0  | 6.0   | 6.0   | 6.0  |
| Vehicle Extension (s)             |                                                                                    | 4.0   |        |      | 4.0    |      | 3.5                       | 6.0  | 6.0  | 3.5   | 6.0   | 6.0  |
| Lane Grp Cap (vph)                |                                                                                    | 133   |        |      | 69     |      | 26                        | 1022 | 437  | 99    | 1255  | 578  |
| v/s Ratio Prot                    |                                                                                    |       |        |      |        |      | 0.01                      | 0.23 | 0.01 | c0.03 | c0.71 | 0.00 |
| v/s Ratio Perm                    |                                                                                    | c0.03 |        |      | c1.01  |      |                           |      |      |       |       |      |
| v/c Ratio                         |                                                                                    | 0.37  |        |      | 3.19   |      | 0.46                      | 0.72 | 0.02 | 0.47  | 1.99  | 0.01 |
| Uniform Delay, d1                 |                                                                                    | 47.0  |        |      | 37.5   |      | 53.8                      | 33.4 | 26.0 | 50.2  | 35.3  | 22.7 |
| Progression Factor                |                                                                                    | 1.00  |        |      | 1.00   |      | 0.85                      | 1.21 | 1.00 | 0.90  | 0.96  | 1.00 |
| Incremental Delay, d2             |                                                                                    | 2.3   |        |      | 1024.4 |      | 14.4                      | 4.3  | 0.1  | 3.8   | 446.5 | 0.0  |
| Delay (s)                         |                                                                                    | 49.3  |        |      | 1061.9 |      | 60.2                      | 44.5 | 26.1 | 49.1  | 480.4 | 22.8 |
| Level of Service                  |                                                                                    | D     |        |      | F      |      | E                         | D    | C    | D     | F     | C    |
| Approach Delay (s)                |                                                                                    | 49.3  |        |      | 1061.9 |      |                           | 44.0 |      |       | 469.4 |      |
| Approach LOS                      |                                                                                    | D     |        |      | F      |      |                           | D    |      |       | F     |      |
| <b>Intersection Summary</b>       |                                                                                    |       |        |      |        |      |                           |      |      |       |       |      |
| HCM 2000 Control Delay            |                                                                                    |       | 388.9  |      |        |      | HCM 2000 Level of Service |      |      | F     |       |      |
| HCM 2000 Volume to Capacity ratio |                                                                                    |       | 2.28   |      |        |      |                           |      |      |       |       |      |
| Actuated Cycle Length (s)         |                                                                                    |       | 110.0  |      |        |      | Sum of lost time (s)      |      | 24.0 |       |       |      |
| Intersection Capacity Utilization |                                                                                    |       | 105.8% |      |        |      | ICU Level of Service      |      | G    |       |       |      |
| Analysis Period (min)             |                                                                                    |       | 15     |      |        |      |                           |      |      |       |       |      |
| c Critical Lane Group             |                                                                                    |       |        |      |        |      |                           |      |      |       |       |      |

# HCM Unsignalized Intersection Capacity Analysis

## 10: US 29 & Dickerson Road

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)            | 12                                                                                | 0                                                                                 | 17                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 13                                                                                  | 700                                                                                 | 0                                                                                   | 2                                                                                   | 2474                                                                                | 19                                                                                  |
| Future Volume (Veh/h)             | 12                                                                                | 0                                                                                 | 17                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 13                                                                                  | 700                                                                                 | 0                                                                                   | 2                                                                                   | 2474                                                                                | 19                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph)            | 13                                                                                | 0                                                                                 | 18                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 14                                                                                  | 729                                                                                 | 0                                                                                   | 2                                                                                   | 2577                                                                                | 20                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2974                                                                              | 3338                                                                              | 1288                                                                              | 2068                                                                              | 3358                                                                              | 364                                                                               | 2597                                                                                |                                                                                     |                                                                                     |                                                                                     | 729                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             | 2581                                                                              | 2581                                                                              |                                                                                   | 757                                                                               | 757                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 392                                                                               | 757                                                                               |                                                                                   | 1310                                                                              | 2601                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2974                                                                              | 3338                                                                              | 1288                                                                              | 2068                                                                              | 3358                                                                              | 364                                                                               | 2597                                                                                |                                                                                     |                                                                                     |                                                                                     | 729                                                                                 |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.0                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.5                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 50                                                                                | 100                                                                               | 88                                                                                | 99                                                                                | 100                                                                               | 100                                                                               | 87                                                                                  |                                                                                     |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |
| cM capacity (veh/h)               | 26                                                                                | 51                                                                                | 148                                                                               | 123                                                                               | 37                                                                                | 638                                                                               | 110                                                                                 |                                                                                     |                                                                                     |                                                                                     | 884                                                                                 |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 31                                                                                | 1                                                                                 | 14                                                                                | 486                                                                               | 243                                                                               | 2                                                                                 | 1288                                                                                | 1288                                                                                | 20                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 13                                                                                | 1                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 18                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 20                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 50                                                                                | 123                                                                               | 110                                                                               | 1700                                                                              | 1700                                                                              | 884                                                                               | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.62                                                                              | 0.01                                                                              | 0.13                                                                              | 0.29                                                                              | 0.14                                                                              | 0.00                                                                              | 0.76                                                                                | 0.76                                                                                | 0.01                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 61                                                                                | 1                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 158.8                                                                             | 34.6                                                                              | 42.5                                                                              | 0.0                                                                               | 0.0                                                                               | 9.1                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | F                                                                                 | D                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 158.8                                                                             | 34.6                                                                              | 0.8                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | F                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 1.7                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 78.4%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 11: US 29 &amp; Austin Drive

07/22/2021



| Lane Group              | EBL  | EBT  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2    | 35   | 18   | 661  | 2504 | 11   |
| v/c Ratio               | 0.02 | 0.27 | 0.17 | 0.23 | 0.87 | 0.01 |
| Control Delay           | 47.5 | 22.7 | 40.0 | 2.1  | 23.1 | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 47.5 | 22.7 | 40.0 | 2.1  | 23.1 | 0.0  |
| Queue Length 50th (ft)  | 1    | 1    | 12   | 45   | 972  | 0    |
| Queue Length 95th (ft)  | 9    | 34   | 36   | 65   | m566 | m0   |
| Internal Link Dist (ft) |      | 306  |      | 2056 | 2636 |      |
| Turn Bay Length (ft)    |      |      | 500  |      |      | 350  |
| Base Capacity (vph)     | 120  | 130  | 108  | 2860 | 2883 | 1159 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.02 | 0.27 | 0.17 | 0.23 | 0.87 | 0.01 |

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 11: US 29 & Austin Drive

07/22/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)              | 2                                                                                 | 2                                                                                 | 31                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 17                                                                                  | 628                                                                                 | 0                                                                                   | 0                                                                                   | 2379                                                                                | 10                                                                                  |
| Future Volume (vph)               | 2                                                                                 | 2                                                                                 | 31                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 17                                                                                  | 628                                                                                 | 0                                                                                   | 0                                                                                   | 2379                                                                                | 10                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.86                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1805                                                                              | 1491                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1612                                                                                | 3252                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1369                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1805                                                                              | 1491                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1612                                                                                | 3252                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1369                                                                                |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 2                                                                                 | 2                                                                                 | 33                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 18                                                                                  | 661                                                                                 | 0                                                                                   | 0                                                                                   | 2504                                                                                | 11                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 32                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                   |
| Lane Group Flow (vph)             | 2                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 18                                                                                  | 661                                                                                 | 0                                                                                   | 0                                                                                   | 2504                                                                                | 8                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 10%                                                                               | 0%                                                                                | 0%                                                                                | 0%                                                                                | 12%                                                                                 | 11%                                                                                 | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 18%                                                                                 |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     |                                                                                     | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 4.6                                                                               | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.2                                                                                 | 90.9                                                                                |                                                                                     |                                                                                     | 80.2                                                                                | 80.2                                                                                |
| Effective Green, g (s)            | 4.6                                                                               | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.2                                                                                 | 90.9                                                                                |                                                                                     |                                                                                     | 80.2                                                                                | 80.2                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.04                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.03                                                                                | 0.83                                                                                |                                                                                     |                                                                                     | 0.73                                                                                | 0.73                                                                                |
| Clearance Time (s)                | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 75                                                                                | 62                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 46                                                                                  | 2687                                                                                |                                                                                     |                                                                                     | 2555                                                                                | 998                                                                                 |
| v/s Ratio Prot                    | 0.00                                                                              | c0.00                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.01                                                                                | c0.20                                                                               |                                                                                     |                                                                                     | c0.71                                                                               | 0.01                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.03                                                                              | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.39                                                                                | 0.25                                                                                |                                                                                     |                                                                                     | 0.98                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 | 50.6                                                                              | 50.6                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 52.4                                                                                | 2.1                                                                                 |                                                                                     |                                                                                     | 14.1                                                                                | 4.1                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.76                                                                                | 0.95                                                                                |                                                                                     |                                                                                     | 2.16                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.1                                                                               | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                                 | 0.2                                                                                 |                                                                                     |                                                                                     | 2.4                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 50.7                                                                              | 51.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 45.2                                                                                | 2.2                                                                                 |                                                                                     |                                                                                     | 33.0                                                                                | 4.1                                                                                 |
| Level of Service                  | D                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | D                                                                                   | A                                                                                   |                                                                                     |                                                                                     | C                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 51.0                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 3.3                                                                                 |                                                                                     |                                                                                     | 32.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 26.9                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 29.0                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 83.7%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 12: US 29 &amp; Boulders Road

07/22/2021

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 15                                                                                | 32                                                                                | 129                                                                               | 10                                                                                | 11                                                                                | 15                                                                                | 48                                                                                 | 645                                                                                 | 212                                                                                 | 128                                                                                 | 2376                                                                                | 66                                                                                  |
| v/c Ratio               | 0.15                                                                              | 0.15                                                                              | 0.52                                                                              | 0.09                                                                              | 0.10                                                                              | 0.06                                                                              | 0.43                                                                               | 0.33                                                                                | 0.20                                                                                | 0.50                                                                                | 1.05                                                                                | 0.06                                                                                |
| Control Delay           | 52.4                                                                              | 50.5                                                                              | 12.1                                                                              | 50.6                                                                              | 50.8                                                                              | 0.4                                                                               | 62.0                                                                               | 12.0                                                                                | 2.1                                                                                 | 65.3                                                                                | 45.1                                                                                | 0.1                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 52.4                                                                              | 50.5                                                                              | 12.1                                                                              | 50.6                                                                              | 50.8                                                                              | 0.4                                                                               | 62.0                                                                               | 12.0                                                                                | 2.1                                                                                 | 65.3                                                                                | 45.1                                                                                | 0.1                                                                                 |
| Queue Length 50th (ft)  | 10                                                                                | 12                                                                                | 0                                                                                 | 7                                                                                 | 7                                                                                 | 0                                                                                 | 33                                                                                 | 125                                                                                 | 0                                                                                   | 44                                                                                  | ~1064                                                                               | 0                                                                                   |
| Queue Length 95th (ft)  | 35                                                                                | 29                                                                                | 37                                                                                | 26                                                                                | 27                                                                                | 0                                                                                 | 73                                                                                 | 165                                                                                 | 32                                                                                  | m59                                                                                 | #1193                                                                               | m0                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 179                                                                               |                                                                                   |                                                                                   | 369                                                                               |                                                                                   |                                                                                    | 1679                                                                                |                                                                                     |                                                                                     | 2056                                                                                |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   | 175                                                                               |                                                                                   |                                                                                   | 350                                                                               | 400                                                                                |                                                                                     | 300                                                                                 | 550                                                                                 |                                                                                     | 425                                                                                 |
| Base Capacity (vph)     | 99                                                                                | 213                                                                               | 247                                                                               | 109                                                                               | 109                                                                               | 251                                                                               | 111                                                                                | 1966                                                                                | 1067                                                                                | 264                                                                                 | 2253                                                                                | 1106                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.15                                                                              | 0.15                                                                              | 0.52                                                                              | 0.09                                                                              | 0.10                                                                              | 0.06                                                                              | 0.43                                                                               | 0.33                                                                                | 0.20                                                                                | 0.48                                                                                | 1.05                                                                                | 0.06                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 12: US 29 & Boulders Road

07/22/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 23                                                                                | 22                                                                                | 121                                                                               | 19                                                                                | 1                                                                                 | 14                                                                                | 45                                                                                 | 606                                                                                 | 199                                                                                 | 120                                                                                 | 2233                                                                                | 62                                                                                  |
| Future Volume (vph)               | 23                                                                                | 22                                                                                | 121                                                                               | 19                                                                                | 1                                                                                 | 14                                                                                | 45                                                                                 | 606                                                                                 | 199                                                                                 | 120                                                                                 | 2233                                                                                | 62                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 | 0.91                                                                              | 0.91                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 1.00                                                                                | 0.97                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                               | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.99                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1564                                                                              | 3363                                                                              | 1553                                                                              | 1715                                                                              | 1727                                                                              | 1615                                                                              | 1752                                                                               | 3223                                                                                | 1615                                                                                | 3502                                                                                | 3471                                                                                | 1615                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.99                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1564                                                                              | 3363                                                                              | 1553                                                                              | 1715                                                                              | 1727                                                                              | 1615                                                                              | 1752                                                                               | 3223                                                                                | 1615                                                                                | 3502                                                                                | 3471                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                               | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                |
| Adj. Flow (vph)                   | 24                                                                                | 23                                                                                | 129                                                                               | 20                                                                                | 1                                                                                 | 15                                                                                | 48                                                                                 | 645                                                                                 | 212                                                                                 | 128                                                                                 | 2376                                                                                | 66                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 121                                                                               | 0                                                                                 | 0                                                                                 | 14                                                                                | 0                                                                                  | 0                                                                                   | 88                                                                                  | 0                                                                                   | 0                                                                                   | 26                                                                                  |
| Lane Group Flow (vph)             | 15                                                                                | 32                                                                                | 8                                                                                 | 10                                                                                | 11                                                                                | 1                                                                                 | 48                                                                                 | 645                                                                                 | 124                                                                                 | 128                                                                                 | 2376                                                                                | 41                                                                                  |
| Heavy Vehicles (%)                | 5%                                                                                | 0%                                                                                | 4%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 3%                                                                                 | 12%                                                                                 | 0%                                                                                  | 0%                                                                                  | 4%                                                                                  | 0%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                               | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                  | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 4.2                                                                               | 4.2                                                                               | 4.2                                                                               | 5.6                                                                                | 64.4                                                                                | 64.4                                                                                | 8.0                                                                                 | 67.5                                                                                | 67.5                                                                                |
| Effective Green, g (s)            | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 4.2                                                                               | 4.2                                                                               | 4.2                                                                               | 5.6                                                                                | 64.4                                                                                | 64.4                                                                                | 8.0                                                                                 | 67.5                                                                                | 67.5                                                                                |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.04                                                                              | 0.04                                                                              | 0.04                                                                              | 0.05                                                                               | 0.59                                                                                | 0.59                                                                                | 0.07                                                                                | 0.61                                                                                | 0.61                                                                                |
| Clearance Time (s)                | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 99                                                                                | 214                                                                               | 98                                                                                | 65                                                                                | 65                                                                                | 61                                                                                | 89                                                                                 | 1886                                                                                | 945                                                                                 | 254                                                                                 | 2129                                                                                | 991                                                                                 |
| v/s Ratio Prot                    | c0.01                                                                             | 0.01                                                                              | 0.01                                                                              | 0.01                                                                              | c0.01                                                                             | 0.00                                                                              | 0.03                                                                               | 0.20                                                                                | 0.08                                                                                | c0.04                                                                               | c0.68                                                                               | 0.03                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.15                                                                              | 0.15                                                                              | 0.08                                                                              | 0.15                                                                              | 0.17                                                                              | 0.01                                                                              | 0.54                                                                               | 0.34                                                                                | 0.13                                                                                | 0.50                                                                                | 1.12                                                                                | 0.04                                                                                |
| Uniform Delay, d1                 | 48.7                                                                              | 48.7                                                                              | 48.5                                                                              | 51.2                                                                              | 51.2                                                                              | 50.9                                                                              | 50.9                                                                               | 11.8                                                                                | 10.2                                                                                | 49.1                                                                                | 21.2                                                                                | 8.4                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.26                                                                                | 0.46                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.7                                                                               | 0.3                                                                               | 0.4                                                                               | 1.1                                                                               | 1.2                                                                               | 0.1                                                                               | 6.2                                                                                | 0.5                                                                                 | 0.3                                                                                 | 0.8                                                                                 | 56.0                                                                                | 0.0                                                                                 |
| Delay (s)                         | 49.4                                                                              | 49.0                                                                              | 48.9                                                                              | 52.3                                                                              | 52.4                                                                              | 51.0                                                                              | 57.1                                                                               | 12.3                                                                                | 10.5                                                                                | 62.4                                                                                | 65.8                                                                                | 8.5                                                                                 |
| Level of Service                  | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | D                                                                                 | E                                                                                  | B                                                                                   | B                                                                                   | E                                                                                   | E                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 48.9                                                                              |                                                                                   |                                                                                   | 51.8                                                                              |                                                                                   |                                                                                    | 14.3                                                                                |                                                                                     |                                                                                     | 64.2                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 51.1                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                          |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.97                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                               |                                                                                     |                                                                                     | 26.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 91.6%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                               |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>c Critical Lane Group</b>      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 13: US 29 & Camelot Drive

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 7                                                                                 | 0                                                                                 | 48                                                                                | 6                                                                                 | 0                                                                                 | 2                                                                                 | 27                                                                                  | 992                                                                                 | 8                                                                                   | 3                                                                                   | 2468                                                                                | 6                                                                                   |
| Future Volume (Veh/h)             | 7                                                                                 | 0                                                                                 | 48                                                                                | 6                                                                                 | 0                                                                                 | 2                                                                                 | 27                                                                                  | 992                                                                                 | 8                                                                                   | 3                                                                                   | 2468                                                                                | 6                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Hourly flow rate (vph)            | 7                                                                                 | 0                                                                                 | 51                                                                                | 6                                                                                 | 0                                                                                 | 2                                                                                 | 28                                                                                  | 1044                                                                                | 8                                                                                   | 3                                                                                   | 2598                                                                                | 6                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 3184                                                                              | 3712                                                                              | 1299                                                                              | 2456                                                                              | 3710                                                                              | 522                                                                               | 2604                                                                                |                                                                                     |                                                                                     |                                                                                     | 1052                                                                                |                                                                                     |
| vC1, stage 1 conf vol             | 2604                                                                              | 2604                                                                              |                                                                                   | 1100                                                                              | 1100                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 580                                                                               | 1108                                                                              |                                                                                   | 1356                                                                              | 2610                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 3184                                                                              | 3712                                                                              | 1299                                                                              | 2456                                                                              | 3710                                                                              | 522                                                                               | 2604                                                                                |                                                                                     |                                                                                     |                                                                                     | 1052                                                                                |                                                                                     |
| tC, single (s)                    | 7.8                                                                               | 6.5                                                                               | 7.0                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 6.8                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.6                                                                               | 4.0                                                                               | 3.4                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 65                                                                                | 100                                                                               | 65                                                                                | 91                                                                                | 100                                                                               | 100                                                                               | 82                                                                                  |                                                                                     |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |
| cM capacity (veh/h)               | 20                                                                                | 49                                                                                | 146                                                                               | 68                                                                                | 22                                                                                | 505                                                                               | 155                                                                                 |                                                                                     |                                                                                     |                                                                                     | 669                                                                                 |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 58                                                                                | 8                                                                                 | 28                                                                                | 522                                                                               | 522                                                                               | 8                                                                                 | 3                                                                                   | 1299                                                                                | 1299                                                                                | 6                                                                                   |                                                                                     |                                                                                     |
| Volume Left                       | 7                                                                                 | 6                                                                                 | 28                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 51                                                                                | 2                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 8                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 6                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 83                                                                                | 87                                                                                | 155                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 669                                                                                 | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.70                                                                              | 0.09                                                                              | 0.18                                                                              | 0.31                                                                              | 0.31                                                                              | 0.00                                                                              | 0.00                                                                                | 0.76                                                                                | 0.76                                                                                | 0.00                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 84                                                                                | 7                                                                                 | 16                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 115.1                                                                             | 50.8                                                                              | 33.2                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 10.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | F                                                                                 | F                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 115.1                                                                             | 50.8                                                                              | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | F                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 2.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 78.2%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 18: US 29 & Airport Acres Rd South

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |  |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 2                                                                                 | 6                                                                                 | 19                                                                                | 1096                                                                              | 2564                                                                              | 1                                                                                 |
| Future Volume (Veh/h)             | 2                                                                                 | 6                                                                                 | 19                                                                                | 1096                                                                              | 2564                                                                              | 1                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 2                                                                                 | 6                                                                                 | 20                                                                                | 1178                                                                              | 2757                                                                              | 1                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 872                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.76                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 3386                                                                              | 1379                                                                              | 2758                                                                              |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             | 2758                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 629                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 3506                                                                              | 1379                                                                              | 2758                                                                              |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 7.3                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.5                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 94                                                                                | 95                                                                                | 86                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 34                                                                                | 114                                                                               | 146                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              |
| Volume Total                      | 8                                                                                 | 20                                                                                | 589                                                                               | 589                                                                               | 1838                                                                              | 920                                                                               |
| Volume Left                       | 2                                                                                 | 20                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Volume Right                      | 6                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 |
| cSH                               | 72                                                                                | 146                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              |
| Volume to Capacity                | 0.11                                                                              | 0.14                                                                              | 0.35                                                                              | 0.35                                                                              | 1.08                                                                              | 0.54                                                                              |
| Queue Length 95th (ft)            | 9                                                                                 | 12                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Control Delay (s)                 | 61.4                                                                              | 33.4                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Lane LOS                          | F                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 61.4                                                                              | 0.6                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |
| Approach LOS                      | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 80.9%                                                                             |                                                                                   | ICU Level of Service                                                              | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

## 19: US 29 &amp; Airport Road

07/22/2021



| Lane Group              | EBL  | EBT   | EBR  | WBL   | WBT   | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|-------------------------|------|-------|------|-------|-------|-------|------|------|------|-------|------|
| Lane Group Flow (vph)   | 118  | 78    | 102  | 138   | 235   | 216   | 1051 | 149  | 254  | 2205  | 122  |
| v/c Ratio               | 0.79 | 0.84  | 0.16 | 1.14  | 1.30  | 1.08  | 0.69 | 0.15 | 0.85 | 1.13  | 0.11 |
| Control Delay           | 88.8 | 111.6 | 0.6  | 172.6 | 200.1 | 137.4 | 28.4 | 0.9  | 71.9 | 90.5  | 1.3  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  |
| Total Delay             | 88.8 | 111.6 | 0.6  | 172.6 | 200.1 | 137.4 | 28.4 | 0.9  | 71.9 | 90.5  | 1.3  |
| Queue Length 50th (ft)  | 45   | 58    | 0    | ~119  | ~178  | ~92   | 326  | 0    | 181  | ~996  | 0    |
| Queue Length 95th (ft)  | #96  | #149  | 0    | #247  | #339  | #171  | 406  | 13   | #309 | #1132 | 17   |
| Internal Link Dist (ft) |      | 677   |      |       | 627   |       | 911  |      |      | 792   |      |
| Turn Bay Length (ft)    | 425  |       | 450  | 570   |       | 575   |      | 430  | 475  |       | 540  |
| Base Capacity (vph)     | 149  | 93    | 624  | 121   | 181   | 200   | 1523 | 990  | 321  | 1955  | 1080 |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0     | 0     | 0     | 0    | 0    | 0    | 0     | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0     | 0     | 0     | 0    | 0    | 0    | 0     | 0    |
| Storage Cap Reductn     | 0    | 0     | 0    | 0     | 0     | 0     | 0    | 0    | 0    | 0     | 0    |
| Reduced v/c Ratio       | 0.79 | 0.84  | 0.16 | 1.14  | 1.30  | 1.08  | 0.69 | 0.15 | 0.79 | 1.13  | 0.11 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 19: US 29 & Airport Road

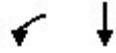
07/22/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 111                                                                               | 73                                                                                | 96                                                                                | 130                                                                               | 77                                                                                | 144                                                                               | 203                                                                                 | 988                                                                                 | 140                                                                                 | 239                                                                                 | 2073                                                                                | 115                                                                                 |
| Future Volume (vph)               | 111                                                                               | 73                                                                                | 96                                                                                | 130                                                                               | 77                                                                                | 144                                                                               | 203                                                                                 | 988                                                                                 | 140                                                                                 | 239                                                                                 | 2073                                                                                | 115                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 10.5                                                                              | 6.7                                                                               | 6.7                                                                               | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                 | 5.7                                                                                 | 5.7                                                                                 | 8.1                                                                                 | 5.7                                                                                 | 5.7                                                                                 |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.88                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.97                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.90                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 3433                                                                              | 1845                                                                              | 2538                                                                              | 1770                                                                              | 1682                                                                              |                                                                                   | 3433                                                                                | 3374                                                                                | 1524                                                                                | 1736                                                                                | 3471                                                                                | 1495                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 3433                                                                              | 1845                                                                              | 2538                                                                              | 1770                                                                              | 1682                                                                              |                                                                                   | 3433                                                                                | 3374                                                                                | 1524                                                                                | 1736                                                                                | 3471                                                                                | 1495                                                                                |
| Peak-hour factor, PHF             | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                |
| Adj. Flow (vph)                   | 118                                                                               | 78                                                                                | 102                                                                               | 138                                                                               | 82                                                                                | 153                                                                               | 216                                                                                 | 1051                                                                                | 149                                                                                 | 254                                                                                 | 2205                                                                                | 122                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 85                                                                                | 0                                                                                 | 58                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 64                                                                                  | 0                                                                                   | 0                                                                                   | 41                                                                                  |
| Lane Group Flow (vph)             | 118                                                                               | 78                                                                                | 17                                                                                | 138                                                                               | 177                                                                               | 0                                                                                 | 216                                                                                 | 1051                                                                                | 85                                                                                  | 254                                                                                 | 2205                                                                                | 81                                                                                  |
| Heavy Vehicles (%)                | 2%                                                                                | 3%                                                                                | 12%                                                                               | 2%                                                                                | 0%                                                                                | 3%                                                                                | 2%                                                                                  | 7%                                                                                  | 6%                                                                                  | 4%                                                                                  | 4%                                                                                  | 8%                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | pt+ov                                                                             | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  | pt+ov                                                                               |
| Protected Phases                  | 7                                                                                 | 4                                                                                 | 4 5                                                                               | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   | 2 3                                                                                 | 1                                                                                   | 6                                                                                   | 6 7                                                                                 |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 5.0                                                                               | 5.8                                                                               | 19.2                                                                              | 7.9                                                                               | 8.4                                                                               |                                                                                   | 6.7                                                                                 | 51.9                                                                                | 65.5                                                                                | 19.8                                                                                | 64.8                                                                                | 75.5                                                                                |
| Effective Green, g (s)            | 5.0                                                                               | 5.8                                                                               | 19.2                                                                              | 7.9                                                                               | 8.4                                                                               |                                                                                   | 6.7                                                                                 | 51.9                                                                                | 65.5                                                                                | 19.8                                                                                | 64.8                                                                                | 75.5                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.05                                                                              | 0.17                                                                              | 0.07                                                                              | 0.07                                                                              |                                                                                   | 0.06                                                                                | 0.45                                                                                | 0.57                                                                                | 0.17                                                                                | 0.56                                                                                | 0.66                                                                                |
| Clearance Time (s)                | 10.5                                                                              | 6.7                                                                               |                                                                                   | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                 | 5.7                                                                                 |                                                                                     | 8.1                                                                                 | 5.7                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 149                                                                               | 93                                                                                | 423                                                                               | 121                                                                               | 122                                                                               |                                                                                   | 200                                                                                 | 1522                                                                                | 868                                                                                 | 298                                                                                 | 1955                                                                                | 981                                                                                 |
| v/s Ratio Prot                    | 0.03                                                                              | 0.04                                                                              | 0.01                                                                              | c0.08                                                                             | c0.11                                                                             |                                                                                   | 0.06                                                                                | 0.31                                                                                | 0.06                                                                                | c0.15                                                                               | c0.64                                                                               | 0.05                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.79                                                                              | 0.84                                                                              | 0.04                                                                              | 1.14                                                                              | 1.45                                                                              |                                                                                   | 1.08                                                                                | 0.69                                                                                | 0.10                                                                                | 0.85                                                                                | 1.13                                                                                | 0.08                                                                                |
| Uniform Delay, d1                 | 54.5                                                                              | 54.1                                                                              | 40.2                                                                              | 53.5                                                                              | 53.3                                                                              |                                                                                   | 54.1                                                                                | 25.1                                                                                | 11.3                                                                                | 46.2                                                                                | 25.1                                                                                | 7.2                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 24.3                                                                              | 45.2                                                                              | 0.0                                                                               | 124.5                                                                             | 241.2                                                                             |                                                                                   | 86.5                                                                                | 2.6                                                                                 | 0.0                                                                                 | 20.3                                                                                | 64.8                                                                                | 0.0                                                                                 |
| Delay (s)                         | 78.8                                                                              | 99.3                                                                              | 40.2                                                                              | 178.1                                                                             | 294.5                                                                             |                                                                                   | 140.7                                                                               | 27.7                                                                                | 11.3                                                                                | 66.5                                                                                | 89.9                                                                                | 7.2                                                                                 |
| Level of Service                  | E                                                                                 | F                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 |                                                                                   | F                                                                                   | C                                                                                   | B                                                                                   | E                                                                                   | F                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 71.0                                                                              |                                                                                   |                                                                                   | 251.5                                                                             |                                                                                   |                                                                                     | 43.2                                                                                |                                                                                     |                                                                                     | 83.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 84.0                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.23                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 115.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     |                                                                                     | 30.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 102.1%                                                                            |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     | G                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

### 141: US 29 (S) & Lewis and Clark U-Turn N

07/22/2021



| Lane Group              | WBL  | SBT   |
|-------------------------|------|-------|
| Lane Group Flow (vph)   | 65   | 2839  |
| v/c Ratio               | 0.43 | 0.95  |
| Control Delay           | 52.5 | 17.3  |
| Queue Delay             | 0.0  | 0.0   |
| Total Delay             | 52.5 | 17.3  |
| Queue Length 50th (ft)  | 42   | 686   |
| Queue Length 95th (ft)  | 89   | #1247 |
| Internal Link Dist (ft) | 23   | 492   |
| Turn Bay Length (ft)    |      |       |
| Base Capacity (vph)     | 300  | 2995  |
| Starvation Cap Reductn  | 0    | 0     |
| Spillback Cap Reductn   | 0    | 0     |
| Storage Cap Reductn     | 0    | 0     |
| Reduced v/c Ratio       | 0.22 | 0.95  |

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

141: US 29 (S) & Lewis and Clark U-Turn N

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Traffic Volume (vph)              | 60                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2612                                                                              |
| Future Volume (vph)               | 60                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2612                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                               |
| Lane Util. Factor                 | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                              |
| Frt                               | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |
| Satd. Flow (prot)                 | 1805                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3471                                                                              |
| Flt Permitted                     | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |
| Satd. Flow (perm)                 | 1805                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3471                                                                              |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)                   | 65                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2839                                                                              |
| RTOR Reduction (vph)              | 6                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 59                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2839                                                                              |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 2%                                                                                | 2%                                                                                | 0%                                                                                | 4%                                                                                |
| Turn Type                         | Prot                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | NA                                                                                |
| Protected Phases                  | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 7.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 93.1                                                                              |
| Effective Green, g (s)            | 7.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 93.1                                                                              |
| Actuated g/C Ratio                | 0.07                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.85                                                                              |
| Clearance Time (s)                | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                               |
| Vehicle Extension (s)             | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                               |
| Lane Grp Cap (vph)                | 129                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2937                                                                              |
| v/s Ratio Prot                    | c0.03                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.82                                                                             |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.46                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.97                                                                              |
| Uniform Delay, d1                 | 49.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.1                                                                               |
| Progression Factor                | 1.04                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |
| Incremental Delay, d2             | 2.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 10.5                                                                              |
| Delay (s)                         | 53.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 17.6                                                                              |
| Level of Service                  | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |
| Approach Delay (s)                | 53.4                                                                              |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 17.6                                                                              |
| Approach LOS                      | D                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | B                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 18.4                                                                              |                                                                                   | HCM 2000 Level of Service                                                         | B                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.93                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 9.0                                                                               |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 110.4%                                                                            |                                                                                   | ICU Level of Service                                                              | H                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 142: US 29 (N) & Lewis and Clark U-Turn N

07/22/2021



| Movement                          | EBL  | EBR    | NBL  | NBT                  | SBT  | SBR  |
|-----------------------------------|------|--------|------|----------------------|------|------|
| Lane Configurations               |      |        |      |                      |      |      |
| Traffic Volume (veh/h)            | 0    | 0      | 60   | 1125                 | 0    | 0    |
| Future Volume (Veh/h)             | 0    | 0      | 60   | 1125                 | 0    | 0    |
| Sign Control                      | Stop |        |      | Free                 | Free |      |
| Grade                             | 0%   |        |      | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92   | 0.92 | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 0    | 0      | 65   | 1223                 | 0    | 0    |
| Pedestrians                       |      |        |      |                      |      |      |
| Lane Width (ft)                   |      |        |      |                      |      |      |
| Walking Speed (ft/s)              |      |        |      |                      |      |      |
| Percent Blockage                  |      |        |      |                      |      |      |
| Right turn flare (veh)            |      |        |      |                      |      |      |
| Median type                       |      |        |      | None                 | None |      |
| Median storage veh                |      |        |      |                      |      |      |
| Upstream signal (ft)              |      |        |      | 861                  |      |      |
| pX, platoon unblocked             | 0.93 |        |      |                      |      |      |
| vC, conflicting volume            | 742  | 0      | 0    |                      |      |      |
| vC1, stage 1 conf vol             |      |        |      |                      |      |      |
| vC2, stage 2 conf vol             |      |        |      |                      |      |      |
| vCu, unblocked vol                | 579  | 0      | 0    |                      |      |      |
| tC, single (s)                    | 6.8  | 6.9    | 4.1  |                      |      |      |
| tC, 2 stage (s)                   |      |        |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3    | 2.2  |                      |      |      |
| p0 queue free %                   | 100  | 100    | 96   |                      |      |      |
| cM capacity (veh/h)               | 399  | 1084   | 1636 |                      |      |      |
| Direction, Lane #                 | NB 1 | NB 2   | NB 3 |                      |      |      |
| Volume Total                      | 65   | 612    | 612  |                      |      |      |
| Volume Left                       | 65   | 0      | 0    |                      |      |      |
| Volume Right                      | 0    | 0      | 0    |                      |      |      |
| cSH                               | 1636 | 1700   | 1700 |                      |      |      |
| Volume to Capacity                | 0.04 | 0.36   | 0.36 |                      |      |      |
| Queue Length 95th (ft)            | 3    | 0      | 0    |                      |      |      |
| Control Delay (s)                 | 7.3  | 0.0    | 0.0  |                      |      |      |
| Lane LOS                          | A    |        |      |                      |      |      |
| Approach Delay (s)                | 0.4  |        |      |                      |      |      |
| Approach LOS                      |      |        |      |                      |      |      |
| Intersection Summary              |      |        |      |                      |      |      |
| Average Delay                     |      |        | 0.4  |                      |      |      |
| Intersection Capacity Utilization |      | 110.4% |      | ICU Level of Service |      | H    |
| Analysis Period (min)             |      |        | 15   |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

143: US 29 (S)

07/22/2021

|                                   |  |       |      |                      |      |      |
|-----------------------------------|-----------------------------------------------------------------------------------|-------|------|----------------------|------|------|
| Movement                          | WBL                                                                               | WBR   | NBT  | NBR                  | SBL  | SBT  |
| Lane Configurations               |                                                                                   |       |      |                      | ↰    | ↱↱   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0     | 0    | 0                    | 10   | 2671 |
| Future Volume (Veh/h)             | 0                                                                                 | 0     | 0    | 0                    | 10   | 2671 |
| Sign Control                      | Stop                                                                              |       | Free |                      |      | Free |
| Grade                             | 0%                                                                                |       | 0%   |                      |      | 0%   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92  | 0.92 | 0.92                 | 0.95 | 0.95 |
| Hourly flow rate (vph)            | 0                                                                                 | 0     | 0    | 0                    | 11   | 2812 |
| Pedestrians                       |                                                                                   |       |      |                      |      |      |
| Lane Width (ft)                   |                                                                                   |       |      |                      |      |      |
| Walking Speed (ft/s)              |                                                                                   |       |      |                      |      |      |
| Percent Blockage                  |                                                                                   |       |      |                      |      |      |
| Right turn flare (veh)            |                                                                                   |       |      |                      |      |      |
| Median type                       |                                                                                   |       | None |                      |      | None |
| Median storage veh                |                                                                                   |       |      |                      |      |      |
| Upstream signal (ft)              |                                                                                   |       | 295  |                      |      | 850  |
| pX, platoon unblocked             | 0.17                                                                              |       |      |                      |      |      |
| vC, conflicting volume            | 1428                                                                              | 0     |      |                      | 0    |      |
| vC1, stage 1 conf vol             |                                                                                   |       |      |                      |      |      |
| vC2, stage 2 conf vol             |                                                                                   |       |      |                      |      |      |
| vCu, unblocked vol                | 0                                                                                 | 0     |      |                      | 0    |      |
| tC, single (s)                    | 6.8                                                                               | 6.9   |      |                      | 4.1  |      |
| tC, 2 stage (s)                   |                                                                                   |       |      |                      |      |      |
| tF (s)                            | 3.5                                                                               | 3.3   |      |                      | 2.2  |      |
| p0 queue free %                   | 100                                                                               | 100   |      |                      | 99   |      |
| cM capacity (veh/h)               | 173                                                                               | 1084  |      |                      | 1636 |      |
| Direction, Lane #                 | SB 1                                                                              | SB 2  | SB 3 |                      |      |      |
| Volume Total                      | 11                                                                                | 1406  | 1406 |                      |      |      |
| Volume Left                       | 11                                                                                | 0     | 0    |                      |      |      |
| Volume Right                      | 0                                                                                 | 0     | 0    |                      |      |      |
| cSH                               | 1636                                                                              | 1700  | 1700 |                      |      |      |
| Volume to Capacity                | 0.01                                                                              | 0.83  | 0.83 |                      |      |      |
| Queue Length 95th (ft)            | 1                                                                                 | 0     | 0    |                      |      |      |
| Control Delay (s)                 | 7.2                                                                               | 0.0   | 0.0  |                      |      |      |
| Lane LOS                          | A                                                                                 |       |      |                      |      |      |
| Approach Delay (s)                | 0.0                                                                               |       |      |                      |      |      |
| Approach LOS                      |                                                                                   |       |      |                      |      |      |
| Intersection Summary              |                                                                                   |       |      |                      |      |      |
| Average Delay                     |                                                                                   | 0.0   |      |                      |      |      |
| Intersection Capacity Utilization |                                                                                   | 83.9% |      | ICU Level of Service |      | E    |
| Analysis Period (min)             |                                                                                   | 15    |      |                      |      |      |

## Queues

### 144: North Pointe Access 2 & US 29 (N)

07/22/2021



| Lane Group              | EBT  | WBR  | NBT  | NBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 11   | 112  | 1184 | 60   |
| v/c Ratio               | 0.10 | 0.30 | 0.41 | 0.04 |
| Control Delay           | 43.1 | 2.1  | 1.9  | 0.3  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 43.1 | 2.1  | 1.9  | 0.3  |
| Queue Length 50th (ft)  | 7    | 0    | 60   | 0    |
| Queue Length 95th (ft)  | m8   | 0    | 78   | 4    |
| Internal Link Dist (ft) | 27   |      | 197  |      |
| Turn Bay Length (ft)    |      |      |      | 400  |
| Base Capacity (vph)     | 371  | 733  | 2880 | 1400 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.03 | 0.15 | 0.41 | 0.04 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

144: North Pointe Access 2 & US 29 (N)

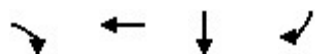
07/22/2021

|                                   |  |  |  |  |  |                                                                                    |  |                                                                                      |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                                                                                                 | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |                                                                                   |   |                                                                                     |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (vph)              | 0                                                                                 | 10                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 106                                                                                                                                                                 | 0                                                                                   | 1125                                                                                                                                                                    | 57                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (vph)               | 0                                                                                 | 10                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 106                                                                                                                                                                 | 0                                                                                   | 1125                                                                                                                                                                    | 57                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                                                                                                                 |                                                                                     | 4.5                                                                                                                                                                     | 4.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.88                                                                                                                                                                |                                                                                     | 0.95                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Frt                               |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.85                                                                                                                                                                |                                                                                     | 1.00                                                                                                                                                                    | 0.85                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Flt Protected                     |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                     | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Satd. Flow (prot)                 |                                                                                   | 1900                                                                              |                                                                                   |                                                                                   |                                                                                   | 2842                                                                                                                                                                |                                                                                     | 3343                                                                                                                                                                    | 1615                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Flt Permitted                     |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                     | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Satd. Flow (perm)                 |                                                                                   | 1900                                                                              |                                                                                   |                                                                                   |                                                                                   | 2842                                                                                                                                                                |                                                                                     | 3343                                                                                                                                                                    | 1615                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                                                                                                | 0.95                                                                                | 0.95                                                                                                                                                                    | 0.95                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 0                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 112                                                                                                                                                                 | 0                                                                                   | 1184                                                                                                                                                                    | 60                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 106                                                                                                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 6                                                                                                                                                                   | 0                                                                                   | 1184                                                                                                                                                                    | 52                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                                                                                                  | 0%                                                                                  | 8%                                                                                                                                                                      | 0%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         |                                                                                   | NA                                                                                |                                                                                   |                                                                                   |                                                                                   | Perm                                                                                                                                                                |                                                                                     | NA                                                                                                                                                                      | Perm                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     | 2                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 8                                                                                                                                                                   |                                                                                     |                                                                                                                                                                         | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 6.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.2                                                                                                                                                                 |                                                                                     | 94.8                                                                                                                                                                    | 94.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Effective Green, g (s)            |                                                                                   | 6.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.2                                                                                                                                                                 |                                                                                     | 94.8                                                                                                                                                                    | 94.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Actuated g/C Ratio                |                                                                                   | 0.06                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.06                                                                                                                                                                |                                                                                     | 0.86                                                                                                                                                                    | 0.86                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Clearance Time (s)                |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                                                                                                                 |                                                                                     | 4.5                                                                                                                                                                     | 4.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                                                                                                                 |                                                                                     | 3.0                                                                                                                                                                     | 3.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap (vph)                |                                                                                   | 107                                                                               |                                                                                   |                                                                                   |                                                                                   | 160                                                                                                                                                                 |                                                                                     | 2881                                                                                                                                                                    | 1391                                                                                |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Prot                    |                                                                                   | c0.01                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     | c0.35                                                                                                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.00                                                                                                                                                                |                                                                                     |                                                                                                                                                                         | 0.03                                                                                |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.10                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.04                                                                                                                                                                |                                                                                     | 0.41                                                                                                                                                                    | 0.04                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay, d1                 |                                                                                   | 49.3                                                                              |                                                                                   |                                                                                   |                                                                                   | 49.1                                                                                                                                                                |                                                                                     | 1.6                                                                                                                                                                     | 1.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Progression Factor                |                                                                                   | 0.87                                                                              |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |                                                                                     | 0.88                                                                                                                                                                    | 0.88                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incremental Delay, d2             |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.1                                                                                                                                                                 |                                                                                     | 0.4                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Delay (s)                         |                                                                                   | 42.8                                                                              |                                                                                   |                                                                                   |                                                                                   | 49.2                                                                                                                                                                |                                                                                     | 1.8                                                                                                                                                                     | 1.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Level of Service                  |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                                                                                                   |                                                                                     | A                                                                                                                                                                       | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                |                                                                                   | 42.8                                                                              |                                                                                   |                                                                                   | 49.2                                                                              |                                                                                                                                                                     |                                                                                     | 1.8                                                                                                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                                                                                                     |                                                                                     | A                                                                                                                                                                       |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                                                                                                           |                                                                                     | A                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.39                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                                                                                                |                                                                                     | 9.0                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 77.2%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                                                                                                |                                                                                     | D                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 145: US 29 (S) &amp; Lewis and Clark Dr

07/22/2021



| Lane Group              | EBR  | WBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 37   | 71   | 2615 | 197  |
| v/c Ratio               | 0.16 | 0.44 | 0.88 | 0.14 |
| Control Delay           | 31.4 | 56.2 | 5.1  | 0.5  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 31.4 | 56.2 | 5.1  | 0.5  |
| Queue Length 50th (ft)  | 7    | 50   | 160  | 1    |
| Queue Length 95th (ft)  | 25   | 96   | m198 | m3   |
| Internal Link Dist (ft) |      | 36   | 215  |      |
| Turn Bay Length (ft)    |      |      |      | 450  |
| Base Capacity (vph)     | 421  | 304  | 2980 | 1401 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.09 | 0.23 | 0.88 | 0.14 |

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

145: US 29 (S) & Lewis and Clark Dr

07/22/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)              | 0                                                                                 | 0                                                                                 | 35                                                                                | 0                                                                                 | 65                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2484                                                                                | 187                                                                                 |
| Future Volume (vph)               | 0                                                                                 | 0                                                                                 | 35                                                                                | 0                                                                                 | 65                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2484                                                                                | 187                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |
| Lane Util. Factor                 |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   |                                                                                   | 2493                                                                              |                                                                                   | 1863                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 3471                                                                                | 1599                                                                                |
| Flt Permitted                     |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   |                                                                                   | 2493                                                                              |                                                                                   | 1863                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 3471                                                                                | 1599                                                                                |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 0                                                                                 | 0                                                                                 | 37                                                                                | 0                                                                                 | 71                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2615                                                                                | 197                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 15                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 31                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 22                                                                                | 0                                                                                 | 71                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2615                                                                                | 166                                                                                 |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 14%                                                                               | 0%                                                                                | 2%                                                                                | 0%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 0%                                                                                  | 4%                                                                                  | 1%                                                                                  |
| Turn Type                         |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   | NA                                                                                |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 | 8                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             |                                                                                   |                                                                                   | 8.3                                                                               |                                                                                   | 8.3                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 92.7                                                                                | 92.7                                                                                |
| Effective Green, g (s)            |                                                                                   |                                                                                   | 8.3                                                                               |                                                                                   | 8.3                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 92.7                                                                                | 92.7                                                                                |
| Actuated g/C Ratio                |                                                                                   |                                                                                   | 0.08                                                                              |                                                                                   | 0.08                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.84                                                                                | 0.84                                                                                |
| Clearance Time (s)                |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |
| Vehicle Extension (s)             |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   |                                                                                   | 188                                                                               |                                                                                   | 140                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2925                                                                                | 1347                                                                                |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.04                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | c0.75                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.10                                                                                |
| v/c Ratio                         |                                                                                   |                                                                                   | 0.12                                                                              |                                                                                   | 0.51                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.89                                                                                | 0.12                                                                                |
| Uniform Delay, d1                 |                                                                                   |                                                                                   | 47.4                                                                              |                                                                                   | 48.9                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 5.5                                                                                 | 1.5                                                                                 |
| Progression Factor                |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.03                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.41                                                                                | 1.25                                                                                |
| Incremental Delay, d2             |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   | 2.7                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1.8                                                                                 | 0.1                                                                                 |
| Delay (s)                         |                                                                                   |                                                                                   | 47.7                                                                              |                                                                                   | 52.8                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 | 2.0                                                                                 |
| Level of Service                  |                                                                                   |                                                                                   | D                                                                                 |                                                                                   | D                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 47.7                                                                              |                                                                                   |                                                                                   | 52.8                                                                              |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 3.9                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 5.7                                                                               |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                     |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.86                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 9.0                                                                                 |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 112.0%                                                                            |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | H                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

146: US 29 (N)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 65                                                                                | 1182                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 65                                                                                | 1182                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 68                                                                                | 1244                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 918                                                                               | 277                                                                               |                                                                                   |
| pX, platoon unblocked             | 0.94                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 758                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 618                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 380                                                                               | 1084                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 68                                                                                | 622                                                                               | 622                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 68                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.04                                                                              | 0.37                                                                              | 0.37                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 3                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.3                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 116.3%                                                                            |                                                                                   | ICU Level of Service                                                              |                                                                                   | H                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 147: US 29 (S) & Lewis and Clark U-Turn S

07/22/2021

|                                   |  |      |       |      |                                                                                   |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|------|-------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR  | NBT   | NBR  | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |      |       |      |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0    | 0     | 0    | 26                                                                                | 2437                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0    | 0     | 0    | 26                                                                                | 2437                                                                              |
| Sign Control                      | Stop                                                                              |      | Free  |      |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |      | 0%    |      |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92 | 0.92  | 0.92 | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0    | 0     | 0    | 28                                                                                | 2649                                                                              |
| Pedestrians                       |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |      | None  |      |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |      | 968   |      |                                                                                   | 904                                                                               |
| pX, platoon unblocked             | 0.18                                                                              |      |       |      |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1380                                                                              | 0    |       |      | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 0                                                                                 | 0    |       |      | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9  |       |      | 4.2                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3  |       |      | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100  |       |      | 98                                                                                |                                                                                   |
| cM capacity (veh/h)               | 177                                                                               | 1084 |       |      | 1600                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2 | SB 3  |      |                                                                                   |                                                                                   |
| Volume Total                      | 28                                                                                | 1324 | 1324  |      |                                                                                   |                                                                                   |
| Volume Left                       | 28                                                                                | 0    | 0     |      |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0    | 0     |      |                                                                                   |                                                                                   |
| cSH                               | 1600                                                                              | 1700 | 1700  |      |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.02                                                                              | 0.78 | 0.78  |      |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 0    | 0     |      |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.3                                                                               | 0.0  | 0.0   |      |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |      |       |      |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |      |       |      |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |      |       |      |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |      | 0.1   |      |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |      | 54.6% |      | ICU Level of Service                                                              | A                                                                                 |
| Analysis Period (min)             |                                                                                   |      | 15    |      |                                                                                   |                                                                                   |

## Queues

### 148: US 29 (N) & Lewis and Clark U-Turn S

07/22/2021



| Lane Group              | EBL  | NBT  |
|-------------------------|------|------|
| Lane Group Flow (vph)   | 28   | 1266 |
| v/c Ratio               | 0.14 | 0.41 |
| Control Delay           | 0.8  | 1.3  |
| Queue Delay             | 0.0  | 0.0  |
| Total Delay             | 0.8  | 1.3  |
| Queue Length 50th (ft)  | 0    | 61   |
| Queue Length 95th (ft)  | m0   | 71   |
| Internal Link Dist (ft) | 29   | 889  |
| Turn Bay Length (ft)    |      |      |
| Base Capacity (vph)     | 398  | 3078 |
| Starvation Cap Reductn  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    |
| Reduced v/c Ratio       | 0.07 | 0.41 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 148: US 29 (N) & Lewis and Clark U-Turn S

07/22/2021



| Movement                          | EBL   | EBR  | NBL   | NBT   | SBT                       | SBR  |
|-----------------------------------|-------|------|-------|-------|---------------------------|------|
| Lane Configurations               |       |      |       |       |                           |      |
| Traffic Volume (vph)              | 26    | 0    | 0     | 1165  | 0                         | 0    |
| Future Volume (vph)               | 26    | 0    | 0     | 1165  | 0                         | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900  | 1900                      | 1900 |
| Total Lost time (s)               | 4.5   |      |       | 4.5   |                           |      |
| Lane Util. Factor                 | 1.00  |      |       | 0.95  |                           |      |
| Frt                               | 1.00  |      |       | 1.00  |                           |      |
| Flt Protected                     | 0.95  |      |       | 1.00  |                           |      |
| Satd. Flow (prot)                 | 1719  |      |       | 3343  |                           |      |
| Flt Permitted                     | 0.95  |      |       | 1.00  |                           |      |
| Satd. Flow (perm)                 | 1719  |      |       | 3343  |                           |      |
| Peak-hour factor, PHF             | 0.92  | 0.92 | 0.92  | 0.92  | 0.92                      | 0.92 |
| Adj. Flow (vph)                   | 28    | 0    | 0     | 1266  | 0                         | 0    |
| RTOR Reduction (vph)              | 27    | 0    | 0     | 0     | 0                         | 0    |
| Lane Group Flow (vph)             | 1     | 0    | 0     | 1266  | 0                         | 0    |
| Heavy Vehicles (%)                | 5%    | 0%   | 0%    | 8%    | 2%                        | 2%   |
| Turn Type                         | Prot  |      |       | NA    |                           |      |
| Protected Phases                  | 4     |      |       | 2     |                           |      |
| Permitted Phases                  |       |      |       |       |                           |      |
| Actuated Green, G (s)             | 3.3   |      |       | 97.7  |                           |      |
| Effective Green, g (s)            | 3.3   |      |       | 97.7  |                           |      |
| Actuated g/C Ratio                | 0.03  |      |       | 0.89  |                           |      |
| Clearance Time (s)                | 4.5   |      |       | 4.5   |                           |      |
| Vehicle Extension (s)             | 3.0   |      |       | 3.0   |                           |      |
| Lane Grp Cap (vph)                | 51    |      |       | 2969  |                           |      |
| v/s Ratio Prot                    | c0.00 |      |       | c0.38 |                           |      |
| v/s Ratio Perm                    |       |      |       |       |                           |      |
| v/c Ratio                         | 0.02  |      |       | 0.43  |                           |      |
| Uniform Delay, d1                 | 51.8  |      |       | 1.1   |                           |      |
| Progression Factor                | 1.00  |      |       | 0.82  |                           |      |
| Incremental Delay, d2             | 0.1   |      |       | 0.4   |                           |      |
| Delay (s)                         | 51.8  |      |       | 1.3   |                           |      |
| Level of Service                  | D     |      |       | A     |                           |      |
| Approach Delay (s)                | 51.8  |      |       | 1.3   | 0.0                       |      |
| Approach LOS                      | D     |      |       | A     | A                         |      |
| <b>Intersection Summary</b>       |       |      |       |       |                           |      |
| HCM 2000 Control Delay            |       |      | 2.4   |       | HCM 2000 Level of Service | A    |
| HCM 2000 Volume to Capacity ratio |       |      | 0.41  |       |                           |      |
| Actuated Cycle Length (s)         |       |      | 110.0 |       | Sum of lost time (s)      | 9.0  |
| Intersection Capacity Utilization |       |      | 55.0% |       | ICU Level of Service      | A    |
| Analysis Period (min)             |       |      | 15    |       |                           |      |
| c Critical Lane Group             |       |      |       |       |                           |      |

## Queues

### 151: US 29 (S) & U-Turn Access

07/22/2021



| Lane Group              | WBL  | SBT  |
|-------------------------|------|------|
| Lane Group Flow (vph)   | 20   | 2622 |
| v/c Ratio               | 0.18 | 0.81 |
| Control Delay           | 41.9 | 4.0  |
| Queue Delay             | 0.0  | 0.0  |
| Total Delay             | 41.9 | 4.0  |
| Queue Length 50th (ft)  | 9    | 0    |
| Queue Length 95th (ft)  | m28  | 308  |
| Internal Link Dist (ft) | 22   | 888  |
| Turn Bay Length (ft)    |      |      |
| Base Capacity (vph)     | 302  | 3232 |
| Starvation Cap Reductn  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    |
| Reduced v/c Ratio       | 0.07 | 0.81 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

151: US 29 (S) & U-Turn Access

07/22/2021

| Movement                          | WBL   | WBR  | NBT    | NBR  | SBL                       | SBT   |
|-----------------------------------|-------|------|--------|------|---------------------------|-------|
| Lane Configurations               |       |      |        |      |                           |       |
| Traffic Volume (vph)              | 19    | 0    | 0      | 0    | 0                         | 2438  |
| Future Volume (vph)               | 19    | 0    | 0      | 0    | 0                         | 2438  |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900   | 1900 | 1900                      | 1900  |
| Total Lost time (s)               | 4.5   |      |        |      |                           | 4.5   |
| Lane Util. Factor                 | 1.00  |      |        |      |                           | 0.95  |
| Frt                               | 1.00  |      |        |      |                           | 1.00  |
| Flt Protected                     | 0.95  |      |        |      |                           | 1.00  |
| Satd. Flow (prot)                 | 1805  |      |        |      |                           | 3438  |
| Flt Permitted                     | 0.95  |      |        |      |                           | 1.00  |
| Satd. Flow (perm)                 | 1805  |      |        |      |                           | 3438  |
| Peak-hour factor, PHF             | 0.93  | 0.93 | 0.93   | 0.93 | 0.93                      | 0.93  |
| Adj. Flow (vph)                   | 20    | 0    | 0      | 0    | 0                         | 2622  |
| RTOR Reduction (vph)              | 9     | 0    | 0      | 0    | 0                         | 0     |
| Lane Group Flow (vph)             | 11    | 0    | 0      | 0    | 0                         | 2622  |
| Heavy Vehicles (%)                | 0%    | 0%   | 0%     | 0%   | 0%                        | 5%    |
| Turn Type                         | Prot  |      |        |      |                           | NA    |
| Protected Phases                  | 8     |      |        |      |                           | 6     |
| Permitted Phases                  |       |      |        |      |                           |       |
| Actuated Green, G (s)             | 3.0   |      |        |      |                           | 98.0  |
| Effective Green, g (s)            | 3.0   |      |        |      |                           | 98.0  |
| Actuated g/C Ratio                | 0.03  |      |        |      |                           | 0.89  |
| Clearance Time (s)                | 4.5   |      |        |      |                           | 4.5   |
| Vehicle Extension (s)             | 3.0   |      |        |      |                           | 3.0   |
| Lane Grp Cap (vph)                | 49    |      |        |      |                           | 3062  |
| v/s Ratio Prot                    | c0.01 |      |        |      |                           | c0.76 |
| v/s Ratio Perm                    |       |      |        |      |                           |       |
| v/c Ratio                         | 0.23  |      |        |      |                           | 0.86  |
| Uniform Delay, d1                 | 52.4  |      |        |      |                           | 2.8   |
| Progression Factor                | 1.14  |      |        |      |                           | 0.75  |
| Incremental Delay, d2             | 2.2   |      |        |      |                           | 1.7   |
| Delay (s)                         | 61.9  |      |        |      |                           | 3.7   |
| Level of Service                  | E     |      |        |      |                           | A     |
| Approach Delay (s)                | 61.9  |      | 0.0    |      |                           | 3.7   |
| Approach LOS                      | E     |      | A      |      |                           | A     |
| <b>Intersection Summary</b>       |       |      |        |      |                           |       |
| HCM 2000 Control Delay            |       |      | 4.2    |      | HCM 2000 Level of Service | A     |
| HCM 2000 Volume to Capacity ratio |       |      | 0.84   |      |                           |       |
| Actuated Cycle Length (s)         |       |      | 110.0  |      | Sum of lost time (s)      | 9.0   |
| Intersection Capacity Utilization |       |      | 105.9% |      | ICU Level of Service      | G     |
| Analysis Period (min)             |       |      | 15     |      |                           |       |
| c Critical Lane Group             |       |      |        |      |                           |       |

# HCM Unsignalized Intersection Capacity Analysis

## 152: US 29 (N) & U-Turn Access

07/22/2021

|                                   |  |  |                                                                                    |                                                                                    |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                                                                                                                 | NBT                                                                                                                                                                 | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |   |   |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 19                                                                                                                                                                  | 1138                                                                                                                                                                | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 19                                                                                                                                                                  | 1138                                                                                                                                                                | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                                                                                                     | Free                                                                                                                                                                | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                                                                                                     | 0%                                                                                                                                                                  | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                | 0.93                                                                                                                                                                | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 20                                                                                                                                                                  | 1224                                                                                                                                                                | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                                                                                                     | None                                                                                                                                                                | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                                                                                                     | 522                                                                                                                                                                 | 969                                                                               |                                                                                   |
| pX, platoon unblocked             | 0.92                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| vC, conflicting volume            | 652                                                                               | 0                                                                                 | 0                                                                                                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 461                                                                               | 0                                                                                 | 0                                                                                                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                                                                                                                 |                                                                                                                                                                     |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                                                                                                                 |                                                                                                                                                                     |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 99                                                                                                                                                                  |                                                                                                                                                                     |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 488                                                                               | 1091                                                                              | 1636                                                                                                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                                                                                                                | NB 4                                                                                                                                                                |                                                                                   |                                                                                   |
| Volume Total                      | 10                                                                                | 10                                                                                | 612                                                                                                                                                                 | 612                                                                                                                                                                 |                                                                                   |                                                                                   |
| Volume Left                       | 10                                                                                | 10                                                                                | 0                                                                                                                                                                   | 0                                                                                                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1636                                                                              | 1700                                                                                                                                                                | 1700                                                                                                                                                                |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.01                                                                              | 0.36                                                                                                                                                                | 0.36                                                                                                                                                                |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 1                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 7.2                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                                                                                                                 |                                                                                                                                                                     |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 105.9%                                                                            |                                                                                                                                                                     | ICU Level of Service                                                                                                                                                |                                                                                   | G                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                                                                                                  |                                                                                                                                                                     |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

161: Northside Dr E & US 29 (S)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 23                                                                                | 2539                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 23                                                                                | 2539                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 25                                                                                | 2730                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 518                                                                               |
| pX, platoon unblocked             | 0.12                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1415                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 98                                                                                |                                                                                   |
| cM capacity (veh/h)               | 123                                                                               | 1091                                                                              |                                                                                   |                                                                                   | 1636                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              | SB 4                                                                              |                                                                                   |                                                                                   |
| Volume Total                      | 12                                                                                | 12                                                                                | 1365                                                                              | 1365                                                                              |                                                                                   |                                                                                   |
| Volume Left                       | 12                                                                                | 12                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.02                                                                              | 0.02                                                                              | 0.80                                                                              | 0.80                                                                              |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 92.5%                                                                             |                                                                                   | ICU Level of Service                                                              | F                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

### 162: US 29 (N) & Northside Dr E/North Pointe Access 1

07/22/2021



| Lane Group              | EBT  | WBR  | NBT  | NBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 25   | 217  | 1243 | 59   |
| v/c Ratio               | 0.17 | 0.60 | 0.43 | 0.04 |
| Control Delay           | 42.8 | 17.9 | 2.6  | 0.5  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 42.8 | 17.9 | 2.6  | 0.5  |
| Queue Length 50th (ft)  | 8    | 12   | 70   | 0    |
| Queue Length 95th (ft)  | m11  | 51   | 127  | 6    |
| Internal Link Dist (ft) | 14   |      | 174  |      |
| Turn Bay Length (ft)    |      |      |      | 300  |
| Base Capacity (vph)     | 456  | 735  | 2890 | 1379 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.05 | 0.30 | 0.43 | 0.04 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 162: US 29 (N) & Northside Dr E/North Pointe Access 1

07/22/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |                                                                                   |  |                                                                                     |  |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (vph)              | 0                                                                                 | 23                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 202                                                                               | 0                                                                                   | 1156                                                                                | 55                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (vph)               | 0                                                                                 | 23                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 202                                                                               | 0                                                                                   | 1156                                                                                | 55                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane Util. Factor                 |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                     | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Frt                               |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.85                                                                              |                                                                                     | 1.00                                                                                | 0.85                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Flt Protected                     |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Satd. Flow (prot)                 |                                                                                   | 2136                                                                              |                                                                                   |                                                                                   |                                                                                   | 2760                                                                              |                                                                                     | 3406                                                                                | 1615                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Flt Permitted                     |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Satd. Flow (perm)                 |                                                                                   | 2136                                                                              |                                                                                   |                                                                                   |                                                                                   | 2760                                                                              |                                                                                     | 3406                                                                                | 1615                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Peak-hour factor, PHF             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Adj. Flow (vph)                   | 0                                                                                 | 25                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 217                                                                               | 0                                                                                   | 1243                                                                                | 59                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 172                                                                               | 0                                                                                   | 0                                                                                   | 9                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 25                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 45                                                                                | 0                                                                                   | 1243                                                                                | 50                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 69%                                                                               | 0%                                                                                | 0%                                                                                | 0%                                                                                | 3%                                                                                | 0%                                                                                  | 6%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  |
| Turn Type                         |                                                                                   | NA                                                                                |                                                                                   |                                                                                   |                                                                                   | Perm                                                                              |                                                                                     | NA                                                                                  | Perm                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 7.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 7.6                                                                               |                                                                                     | 93.4                                                                                | 93.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Effective Green, g (s)            |                                                                                   | 7.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 7.6                                                                               |                                                                                     | 93.4                                                                                | 93.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Actuated g/C Ratio                |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.07                                                                              |                                                                                     | 0.85                                                                                | 0.85                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Clearance Time (s)                |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap (vph)                |                                                                                   | 147                                                                               |                                                                                   |                                                                                   |                                                                                   | 190                                                                               |                                                                                     | 2892                                                                                | 1371                                                                                |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Prot                    |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | c0.36                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.02                                                                             |                                                                                     |                                                                                     | 0.03                                                                                |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.17                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.24                                                                              |                                                                                     | 0.43                                                                                | 0.04                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay, d1                 |                                                                                   | 48.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 48.5                                                                              |                                                                                     | 2.0                                                                                 | 1.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Progression Factor                |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incremental Delay, d2             |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.6                                                                               |                                                                                     | 0.5                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Delay (s)                         |                                                                                   | 42.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 49.1                                                                              |                                                                                     | 2.4                                                                                 | 1.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Level of Service                  |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                     | A                                                                                   | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                |                                                                                   | 42.6                                                                              |                                                                                   |                                                                                   | 49.1                                                                              |                                                                                   |                                                                                     | 2.4                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 9.6                                                                               |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.42                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 110.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                     | 9.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 118.0%                                                                            |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     | H                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

163: US 29 (S) & Northside Dr W

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                          |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                                                                                                         | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |    |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 12                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2528                                                                                                                                                                                                                                                        | 11                                                                                  |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 12                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2528                                                                                                                                                                                                                                                        | 11                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                               |                                                                                     |                                                                                     | Free                                                                                |                                                                                                                                                                                                                                                             |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                 |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                                                                                                                                                                                             |                                                                                     |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                               | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                                                                                                                                                                                        | 0.93                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 13                                                                                | 0                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2718                                                                                                                                                                                                                                                        | 12                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                                                                                                                                                                                             |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             | 769                                                                                 |
| pX, platoon unblocked             | 0.13                                                                              | 0.13                                                                              | 0.13                                                                              | 0.13                                                                              | 0.13                                                                              |                                                                                   | 0.13                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| vC, conflicting volume            | 2720                                                                              | 2718                                                                              | 1359                                                                              | 1372                                                                              | 2730                                                                              | 0                                                                                 | 2730                                                                               |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                                                                                                           |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| vCu, unblocked vol                | 782                                                                               | 762                                                                               | 0                                                                                 | 0                                                                                 | 857                                                                               | 0                                                                                 | 857                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                                                                                                           |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.7                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                                                                                                                                                                                         |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.7                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                                                                                                                                                                                         |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 89                                                                                | 100                                                                               | 86                                                                                | 100                                                                               | 100                                                                                |                                                                                     |                                                                                     |                                                                                     | 100                                                                                                                                                                                                                                                         |                                                                                     |
| cM capacity (veh/h)               | 33                                                                                | 42                                                                                | 123                                                                               | 116                                                                               | 37                                                                                | 1091                                                                              | 100                                                                                |                                                                                     |                                                                                     |                                                                                     | 1636                                                                                                                                                                                                                                                        |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Volume Total                      | 13                                                                                | 5                                                                                 | 1359                                                                              | 1359                                                                              | 12                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Volume Right                      | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 12                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| cSH                               | 123                                                                               | 37                                                                                | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Volume to Capacity                | 0.11                                                                              | 0.14                                                                              | 0.80                                                                              | 0.80                                                                              | 0.01                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Queue Length 95th (ft)            | 9                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Control Delay (s)                 | 37.8                                                                              | 117.1                                                                             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Lane LOS                          | E                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Approach Delay (s)                | 37.8                                                                              | 117.1                                                                             | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Approach LOS                      | E                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 79.9%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                             |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

164: US 29 (N) & Northside Dr W

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 5                                                                                 | 1211                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 5                                                                                 | 1211                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 5                                                                                 | 1302                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 254                                                                               |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 661                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 661                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 399                                                                               | 1091                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 5                                                                                 | 651                                                                               | 651                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 5                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.38                                                                              | 0.38                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 79.9%                                                                             | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 171: Airport Acres Rd (North) E & US 29 (S)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 2571                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 2571                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 2765                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1384                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1384                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)               | 137                                                                               | 1091                                                                              |                                                                                   |                                                                                   | 1636                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 1                                                                                 | 1382                                                                              | 1382                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.81                                                                              | 0.81                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 74.4%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 172: Airport Acres Rd (North) E & US 29 (N)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 1                                                                                 | 0                                                                                 | 0                                                                                 | 1133                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 1                                                                                 | 0                                                                                 | 0                                                                                 | 1133                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 1                                                                                 | 0                                                                                 | 0                                                                                 | 1218                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 609                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 609                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 427                                                                               | 1091                                                                              | 1636                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 1                                                                                 | 609                                                                               | 609                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 427                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.36                                                                              | 0.36                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 13.5                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 13.5                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 41.3%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | A                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 173: US 29 (S) & Airport Acres Rd (North) W

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 4                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2570                                                                                | 1                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 4                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2570                                                                                | 1                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                  |                                                                                     |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 4                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2763                                                                                | 1                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2764                                                                              | 2764                                                                              | 1382                                                                              | 1386                                                                              | 2764                                                                              | 0                                                                                 | 2764                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2764                                                                              | 2764                                                                              | 1382                                                                              | 1386                                                                              | 2764                                                                              | 0                                                                                 | 2764                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 97                                                                                | 100                                                                               | 95                                                                                | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |
| cM capacity (veh/h)               | 9                                                                                 | 20                                                                                | 136                                                                               | 101                                                                               | 20                                                                                | 1091                                                                              | 146                                                                                 |                                                                                     |                                                                                     |                                                                                     | 1636                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 4                                                                                 | 1                                                                                 | 1842                                                                              | 922                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 4                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 136                                                                               | 20                                                                                | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.03                                                                              | 0.05                                                                              | 1.08                                                                              | 0.54                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 2                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 32.3                                                                              | 197.2                                                                             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | D                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 32.3                                                                              | 197.2                                                                             | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | D                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 81.1%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

174: US 29 (N)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1133                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1133                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1218                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 611                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 611                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 430                                                                               | 1091                                                                              | 1636                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 1                                                                                 | 609                                                                               | 609                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.36                                                                              | 0.36                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 81.1%                                                                             | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 1: US 29 & Deerfield Drive

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 58                                                                                | 1                                                                                 | 26                                                                                | 10                                                                                | 5                                                                                 | 21                                                                                | 38                                                                                  | 1652                                                                                | 28                                                                                  | 8                                                                                   | 1006                                                                                | 53                                                                                  |
| Future Volume (Veh/h)             | 58                                                                                | 1                                                                                 | 26                                                                                | 10                                                                                | 5                                                                                 | 21                                                                                | 38                                                                                  | 1652                                                                                | 28                                                                                  | 8                                                                                   | 1006                                                                                | 53                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph)            | 60                                                                                | 1                                                                                 | 27                                                                                | 10                                                                                | 5                                                                                 | 22                                                                                | 40                                                                                  | 1721                                                                                | 29                                                                                  | 8                                                                                   | 1048                                                                                | 55                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             | 0.58                                                                              | 0.58                                                                              |                                                                                   | 0.58                                                                              | 0.58                                                                              | 0.58                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.58                                                                                |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2029                                                                              | 2894                                                                              | 524                                                                               | 2342                                                                              | 2920                                                                              | 860                                                                               | 1103                                                                                |                                                                                     |                                                                                     | 1750                                                                                |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 1064                                                                              | 1064                                                                              |                                                                                   | 1801                                                                              | 1801                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 965                                                                               | 1830                                                                              |                                                                                   | 540                                                                               | 1119                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 1320                                                                              | 2817                                                                              | 524                                                                               | 1860                                                                              | 2862                                                                              | 0                                                                                 | 1103                                                                                |                                                                                     |                                                                                     | 837                                                                                 |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 7.0                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 6.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.2                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 72                                                                                | 99                                                                                | 95                                                                                | 93                                                                                | 96                                                                                | 97                                                                                | 94                                                                                  |                                                                                     |                                                                                     | 98                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 212                                                                               | 141                                                                               | 503                                                                               | 145                                                                               | 116                                                                               | 630                                                                               | 640                                                                                 |                                                                                     |                                                                                     | 466                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 88                                                                                | 37                                                                                | 40                                                                                | 860                                                                               | 860                                                                               | 29                                                                                | 8                                                                                   | 524                                                                                 | 524                                                                                 | 55                                                                                  |                                                                                     |                                                                                     |
| Volume Left                       | 60                                                                                | 10                                                                                | 40                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 27                                                                                | 22                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 29                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 55                                                                                  |                                                                                     |                                                                                     |
| cSH                               | 304                                                                               | 251                                                                               | 640                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 466                                                                                 | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.29                                                                              | 0.15                                                                              | 0.06                                                                              | 0.51                                                                              | 0.51                                                                              | 0.02                                                                              | 0.02                                                                                | 0.31                                                                                | 0.31                                                                                | 0.03                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 29                                                                                | 13                                                                                | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 23.9                                                                              | 21.8                                                                              | 11.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 12.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | C                                                                                 | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 23.9                                                                              | 21.8                                                                              | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 1.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 61.7%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                     |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 2: US 29 &amp; Matthew Mill Road

07/22/2021



| Lane Group              | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|-------|------|------|
| Lane Group Flow (vph)   | 154  | 120  | 108  | 111  | 59   | 214  | 1602 | 239  | 92    | 925  | 75   |
| v/c Ratio               | 0.89 | 0.32 | 0.77 | 0.75 | 0.18 | 0.77 | 0.89 | 0.25 | 0.83  | 0.63 | 0.09 |
| Control Delay           | 95.0 | 2.2  | 85.9 | 83.2 | 1.2  | 60.2 | 41.4 | 6.3  | 105.4 | 30.8 | 0.2  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 2.6  | 0.0  | 0.0   | 0.0  | 0.0  |
| Total Delay             | 95.0 | 2.2  | 85.9 | 83.2 | 1.2  | 60.2 | 44.1 | 6.3  | 105.4 | 30.8 | 0.2  |
| Queue Length 50th (ft)  | 118  | 0    | 87   | 89   | 0    | 148  | 645  | 26   | 72    | 300  | 0    |
| Queue Length 95th (ft)  | #240 | 0    | #184 | #183 | 0    | 228  | 728  | 68   | #173  | 387  | 0    |
| Internal Link Dist (ft) | 263  |      |      | 737  |      |      | 534  |      |       | 690  |      |
| Turn Bay Length (ft)    |      |      | 600  |      | 575  | 300  |      | 355  | 625   |      |      |
| Base Capacity (vph)     | 180  | 385  | 147  | 154  | 326  | 330  | 1796 | 944  | 111   | 1469 | 793  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 110  | 0    | 0     | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    |
| Reduced v/c Ratio       | 0.86 | 0.31 | 0.73 | 0.72 | 0.18 | 0.65 | 0.95 | 0.25 | 0.83  | 0.63 | 0.09 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 2: US 29 & Matthew Mill Road

07/22/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 94                                                                                | 52                                                                                | 114                                                                               | 141                                                                               | 67                                                                                | 56                                                                                | 203                                                                                 | 1522                                                                                | 227                                                                                 | 87                                                                                  | 879                                                                                 | 71                                                                                  |
| Future Volume (vph)               | 94                                                                                | 52                                                                                | 114                                                                               | 141                                                                               | 67                                                                                | 56                                                                                | 203                                                                                 | 1522                                                                                | 227                                                                                 | 87                                                                                  | 879                                                                                 | 71                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 0.97                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 1841                                                                              | 1599                                                                              | 1681                                                                              | 1760                                                                              | 1599                                                                              | 1805                                                                                | 3505                                                                                | 1615                                                                                | 1805                                                                                | 3505                                                                                | 1615                                                                                |
| Flt Permitted                     |                                                                                   | 0.74                                                                              | 1.00                                                                              | 0.95                                                                              | 0.98                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 1399                                                                              | 1599                                                                              | 1681                                                                              | 1760                                                                              | 1599                                                                              | 1805                                                                                | 3505                                                                                | 1615                                                                                | 1805                                                                                | 3505                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 99                                                                                | 55                                                                                | 120                                                                               | 148                                                                               | 71                                                                                | 59                                                                                | 214                                                                                 | 1602                                                                                | 239                                                                                 | 92                                                                                  | 925                                                                                 | 75                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 105                                                                               | 0                                                                                 | 0                                                                                 | 54                                                                                | 0                                                                                   | 0                                                                                   | 117                                                                                 | 0                                                                                   | 0                                                                                   | 44                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                 | 154                                                                               | 15                                                                                | 108                                                                               | 111                                                                               | 5                                                                                 | 214                                                                                 | 1602                                                                                | 122                                                                                 | 92                                                                                  | 925                                                                                 | 31                                                                                  |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 1%                                                                                | 2%                                                                                | 0%                                                                                | 1%                                                                                | 0%                                                                                  | 3%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 0%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  |                                                                                   | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 15.0                                                                              | 15.0                                                                              | 10.1                                                                              | 10.1                                                                              | 10.1                                                                              | 18.6                                                                                | 61.5                                                                                | 61.5                                                                                | 7.4                                                                                 | 50.3                                                                                | 50.3                                                                                |
| Effective Green, g (s)            |                                                                                   | 15.0                                                                              | 15.0                                                                              | 10.1                                                                              | 10.1                                                                              | 10.1                                                                              | 18.6                                                                                | 61.5                                                                                | 61.5                                                                                | 7.4                                                                                 | 50.3                                                                                | 50.3                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.12                                                                              | 0.12                                                                              | 0.08                                                                              | 0.08                                                                              | 0.08                                                                              | 0.16                                                                                | 0.51                                                                                | 0.51                                                                                | 0.06                                                                                | 0.42                                                                                | 0.42                                                                                |
| Clearance Time (s)                |                                                                                   | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.5                                                                               | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 3.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 174                                                                               | 199                                                                               | 141                                                                               | 148                                                                               | 134                                                                               | 279                                                                                 | 1796                                                                                | 827                                                                                 | 111                                                                                 | 1469                                                                                | 676                                                                                 |
| v/s Ratio Prot                    |                                                                                   |                                                                                   | 0.01                                                                              | c0.06                                                                             | 0.06                                                                              | 0.00                                                                              | c0.12                                                                               | c0.46                                                                               | 0.08                                                                                | 0.05                                                                                | 0.26                                                                                | 0.02                                                                                |
| v/s Ratio Perm                    | c0.11                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.89                                                                              | 0.08                                                                              | 0.77                                                                              | 0.75                                                                              | 0.04                                                                              | 0.77                                                                                | 0.89                                                                                | 0.15                                                                                | 0.83                                                                                | 0.63                                                                                | 0.05                                                                                |
| Uniform Delay, d1                 |                                                                                   | 51.7                                                                              | 46.4                                                                              | 53.8                                                                              | 53.7                                                                              | 50.5                                                                              | 48.6                                                                                | 26.3                                                                                | 15.4                                                                                | 55.7                                                                                | 27.5                                                                                | 20.6                                                                                |
| Progression Factor                |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.94                                                                                | 1.33                                                                                | 2.91                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 37.4                                                                              | 0.2                                                                               | 21.6                                                                              | 19.0                                                                              | 0.1                                                                               | 9.6                                                                                 | 5.8                                                                                 | 0.3                                                                                 | 37.6                                                                                | 2.1                                                                                 | 0.1                                                                                 |
| Delay (s)                         |                                                                                   | 89.0                                                                              | 46.5                                                                              | 75.4                                                                              | 72.8                                                                              | 50.6                                                                              | 55.3                                                                                | 40.8                                                                                | 45.1                                                                                | 93.2                                                                                | 29.6                                                                                | 20.8                                                                                |
| Level of Service                  | F                                                                                 | D                                                                                 | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                 | D                                                                                   | D                                                                                   | D                                                                                   | F                                                                                   | C                                                                                   | C                                                                                   |
| Approach Delay (s)                | 70.4                                                                              |                                                                                   |                                                                                   | 69.1                                                                              |                                                                                   |                                                                                   | 42.8                                                                                |                                                                                     |                                                                                     | 34.3                                                                                |                                                                                     |                                                                                     |
| Approach LOS                      | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 44.3                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.89                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     | 26.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 78.8%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 3: US 29 &amp; Heatherton Drive

07/22/2021



| Lane Group              | EBT  | EBR  | WBR  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2    | 22   | 33   | 69   | 2081 | 1176 | 17   |
| v/c Ratio               | 0.02 | 0.08 | 0.25 | 0.46 | 0.62 | 0.40 | 0.01 |
| Control Delay           | 0.0  | 0.5  | 10.3 | 46.6 | 3.7  | 0.7  | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.8  | 0.1  | 0.0  |
| Total Delay             | 0.0  | 0.5  | 10.3 | 46.6 | 4.5  | 0.7  | 0.0  |
| Queue Length 50th (ft)  | 0    | 0    | 0    | 49   | 300  | 10   | 0    |
| Queue Length 95th (ft)  | 0    | 0    | 17   | m64  | m302 | 14   | m0   |
| Internal Link Dist (ft) | 96   |      |      |      | 1998 | 534  |      |
| Turn Bay Length (ft)    |      |      |      | 550  |      |      |      |
| Base Capacity (vph)     | 95   | 436  | 299  | 170  | 3334 | 2943 | 1327 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 527  | 0    |
| Spillback Cap Reductn   | 0    | 0    | 12   | 0    | 848  | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.02 | 0.05 | 0.11 | 0.41 | 0.84 | 0.49 | 0.01 |

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 3: US 29 & Heatherton Drive

07/22/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |
| Traffic Volume (vph)              | 0                                                                                 | 0                                                                                 | 23                                                                                | 0                                                                                 | 0                                                                                 | 31                                                                                | 66                                                                                  | 1953                                                                                | 24                                                                                  | 0                                                                                   | 1117                                                                                | 16                                                                                  |
| Future Volume (vph)               | 0                                                                                 | 0                                                                                 | 23                                                                                | 0                                                                                 | 0                                                                                 | 31                                                                                | 66                                                                                  | 1953                                                                                | 24                                                                                  | 0                                                                                   | 1117                                                                                | 16                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 4.0                                                                               | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 0.86                                                                              | 0.86                                                                              |                                                                                   |                                                                                   | 0.86                                                                              | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 0                                                                                 | 1644                                                                              |                                                                                   |                                                                                   | 1644                                                                              | 1805                                                                                | 3603                                                                                |                                                                                     |                                                                                     | 3610                                                                                | 1615                                                                                |
| Flt Permitted                     |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 0                                                                                 | 1644                                                                              |                                                                                   |                                                                                   | 1644                                                                              | 1805                                                                                | 3603                                                                                |                                                                                     |                                                                                     | 3610                                                                                | 1615                                                                                |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 0                                                                                 | 0                                                                                 | 24                                                                                | 0                                                                                 | 0                                                                                 | 33                                                                                | 69                                                                                  | 2056                                                                                | 25                                                                                  | 0                                                                                   | 1176                                                                                | 17                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 2                                                                                 | 21                                                                                | 0                                                                                 | 0                                                                                 | 32                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 4                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 69                                                                                  | 2081                                                                                | 0                                                                                   | 0                                                                                   | 1176                                                                                | 13                                                                                  |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  |
| Turn Type                         |                                                                                   |                                                                                   | Perm                                                                              |                                                                                   |                                                                                   | Perm                                                                              | Prot                                                                                | NA                                                                                  |                                                                                     |                                                                                     | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             |                                                                                   | 0.0                                                                               | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               | 8.7                                                                                 | 107.4                                                                               |                                                                                     |                                                                                     | 94.2                                                                                | 94.2                                                                                |
| Effective Green, g (s)            |                                                                                   | 0.0                                                                               | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               | 8.7                                                                                 | 107.4                                                                               |                                                                                     |                                                                                     | 94.2                                                                                | 94.2                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.00                                                                              | 0.03                                                                              |                                                                                   |                                                                                   | 0.03                                                                              | 0.07                                                                                | 0.90                                                                                |                                                                                     |                                                                                     | 0.79                                                                                | 0.79                                                                                |
| Clearance Time (s)                |                                                                                   |                                                                                   | 4.5                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 4.5                                                                                 | 4.5                                                                                 |                                                                                     |                                                                                     | 4.5                                                                                 | 4.5                                                                                 |
| Vehicle Extension (s)             |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 0                                                                                 | 49                                                                                |                                                                                   |                                                                                   | 49                                                                                | 130                                                                                 | 3224                                                                                |                                                                                     |                                                                                     | 2833                                                                                | 1267                                                                                |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.04                                                                                | c0.58                                                                               |                                                                                     |                                                                                     | 0.33                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.01                                                                                |
| v/c Ratio                         |                                                                                   | 0.00                                                                              | 0.01                                                                              |                                                                                   |                                                                                   | 0.02                                                                              | 0.53                                                                                | 0.65                                                                                |                                                                                     |                                                                                     | 0.42                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 |                                                                                   | 60.0                                                                              | 56.5                                                                              |                                                                                   |                                                                                   | 56.5                                                                              | 53.7                                                                                | 1.6                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 | 2.8                                                                                 |
| Progression Factor                |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.76                                                                                | 1.87                                                                                |                                                                                     |                                                                                     | 0.07                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 0.0                                                                               | 0.1                                                                               |                                                                                   |                                                                                   | 0.2                                                                               | 3.0                                                                                 | 0.7                                                                                 |                                                                                     |                                                                                     | 0.4                                                                                 | 0.0                                                                                 |
| Delay (s)                         |                                                                                   | 60.0                                                                              | 56.6                                                                              |                                                                                   |                                                                                   | 56.7                                                                              | 43.7                                                                                | 3.7                                                                                 |                                                                                     |                                                                                     | 0.7                                                                                 | 2.8                                                                                 |
| Level of Service                  |                                                                                   | E                                                                                 | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | D                                                                                   | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 56.9                                                                              |                                                                                   |                                                                                   | 56.7                                                                              |                                                                                   |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     | 0.7                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 4.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.65                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 13.5                                                                                |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 66.4%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>c Critical Lane Group</b>      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 4: US 29 & Terrace Greene Circle

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |                                                                                      |  |  |                                                                                      |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                     |   |  |  |   |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 66                                                                                | 0                                                                                   | 2110                                                                                                                                                                    | 126                                                                                 | 0                                                                                   | 1120                                                                                                                                                                    | 0                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 66                                                                                | 0                                                                                   | 2110                                                                                                                                                                    | 126                                                                                 | 0                                                                                   | 1120                                                                                                                                                                    | 0                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         | Free                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                                                                                                         | 0%                                                                                  |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Peak Hour Factor                  | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 73                                                                                | 0                                                                                   | 2344                                                                                                                                                                    | 140                                                                                 | 0                                                                                   | 1244                                                                                                                                                                    | 0                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                                                                                                         | Raised                                                                              |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                                                                                                         | 2                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC, conflicting volume            | 2489                                                                              | 3728                                                                              | 622                                                                               | 2966                                                                              | 3588                                                                              | 1172                                                                              | 1244                                                                                |                                                                                                                                                                         |                                                                                     | 2484                                                                                |                                                                                                                                                                         |                                                                                     |
| vC1, stage 1 conf vol             | 1244                                                                              | 1244                                                                              | 2344                                                                              |                                                                                   | 2344                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC2, stage 2 conf vol             | 1245                                                                              | 2484                                                                              | 622                                                                               |                                                                                   | 1244                                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vCu, unblocked vol                | 2489                                                                              | 3728                                                                              | 622                                                                               | 2966                                                                              | 3588                                                                              | 1172                                                                              | 1244                                                                                |                                                                                                                                                                         |                                                                                     | 2484                                                                                |                                                                                                                                                                         |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                                                                                                         |                                                                                     | 4.1                                                                                 |                                                                                                                                                                         |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               | 6.5                                                                               |                                                                                   | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                                                                                                         |                                                                                     | 2.2                                                                                 |                                                                                                                                                                         |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 61                                                                                | 100                                                                                 |                                                                                                                                                                         |                                                                                     | 100                                                                                 |                                                                                                                                                                         |                                                                                     |
| cM capacity (veh/h)               | 93                                                                                | 56                                                                                | 434                                                                               | 37                                                                                | 65                                                                                | 188                                                                               | 567                                                                                 |                                                                                                                                                                         |                                                                                     | 185                                                                                 |                                                                                                                                                                         |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                                                                                                    | SB 4                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Total                      | 0                                                                                 | 73                                                                                | 1172                                                                              | 1172                                                                              | 140                                                                               | 0                                                                                 | 622                                                                                 | 622                                                                                                                                                                     | 0                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Right                      | 0                                                                                 | 73                                                                                | 0                                                                                 | 0                                                                                 | 140                                                                               | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| cSH                               | 1700                                                                              | 188                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                                | 1700                                                                                                                                                                    | 1700                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume to Capacity                | 0.00                                                                              | 0.39                                                                              | 0.69                                                                              | 0.69                                                                              | 0.08                                                                              | 0.00                                                                              | 0.37                                                                                | 0.37                                                                                                                                                                    | 0.00                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 42                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 35.7                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane LOS                          | A                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               | 35.7                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                      | A                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 69.1%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                                                                                                         | C                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 5: US 29 & Keleigh Lane

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
|                                   |  |  |  |  |  |  |      |
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |      |
| Lane Configurations               |  |                                                                                   |  |  |  |  |      |
| Traffic Volume (veh/h)            | 11                                                                                | 10                                                                                | 26                                                                                | 1979                                                                              | 942                                                                               | 17                                                                                |      |
| Future Volume (Veh/h)             | 11                                                                                | 10                                                                                | 26                                                                                | 1979                                                                              | 942                                                                               | 17                                                                                |      |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |      |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |      |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |      |
| Hourly flow rate (vph)            | 11                                                                                | 10                                                                                | 27                                                                                | 2061                                                                              | 981                                                                               | 18                                                                                |      |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |      |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |      |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC, conflicting volume            | 2066                                                                              | 490                                                                               | 999                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| vC1, stage 1 conf vol             | 981                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vC2, stage 2 conf vol             | 1084                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| vCu, unblocked vol                | 2066                                                                              | 490                                                                               | 999                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| p0 queue free %                   | 95                                                                                | 98                                                                                | 96                                                                                |                                                                                   |                                                                                   |                                                                                   |      |
| cM capacity (veh/h)               | 211                                                                               | 529                                                                               | 701                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3 |
| Volume Total                      | 21                                                                                | 27                                                                                | 1030                                                                              | 1030                                                                              | 490                                                                               | 490                                                                               | 18   |
| Volume Left                       | 11                                                                                | 27                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Volume Right                      | 10                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 18   |
| cSH                               | 295                                                                               | 701                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700 |
| Volume to Capacity                | 0.07                                                                              | 0.04                                                                              | 0.61                                                                              | 0.61                                                                              | 0.29                                                                              | 0.29                                                                              | 0.01 |
| Queue Length 95th (ft)            | 6                                                                                 | 3                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Control Delay (s)                 | 18.1                                                                              | 10.3                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0  |
| Lane LOS                          | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Approach Delay (s)                | 18.1                                                                              | 0.1                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |      |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Average Delay                     |                                                                                   |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |      |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 64.7%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | C    |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |      |

# HCM Unsignalized Intersection Capacity Analysis

## 6: US 29 & Commercial Entrance

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|--|--|--|--|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |   |  |  |  |  |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |  |   |  |  |  |  |  |   |  |  |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 44                                                                                | 11                                                                                  | 1931                                                                                | 29                                                                                  | 65                                                                                  | 893                                                                                 | 0                                                                                   |   |  |  |  |  |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 44                                                                                | 11                                                                                  | 1931                                                                                | 29                                                                                  | 65                                                                                  | 893                                                                                 | 0                                                                                   |   |  |  |  |  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |   |  |  |  |  |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |   |  |  |  |  |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |   |  |  |  |  |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 | 45                                                                                | 11                                                                                  | 1991                                                                                | 30                                                                                  | 67                                                                                  | 921                                                                                 | 0                                                                                   |   |  |  |  |  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Right turn flare (veh)            | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Median type                       | Raised                                                                            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Median storage veh                | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| vC, conflicting volume            | 2072                                                                              | 3098                                                                              | 460                                                                               | 2608                                                                              | 3068                                                                              | 996                                                                               | 921                                                                                 | 2021                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| vC1, stage 1 conf vol             | 1055                                                                              | 1055                                                                              |                                                                                   | 2013                                                                              | 2013                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| vC2, stage 2 conf vol             | 1018                                                                              | 2043                                                                              |                                                                                   | 594                                                                               | 1055                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| vCu, unblocked vol                | 2072                                                                              | 3098                                                                              | 460                                                                               | 2608                                                                              | 3068                                                                              | 996                                                                               | 921                                                                                 | 2021                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 95                                                                                | 100                                                                               | 82                                                                                | 99                                                                                  | 76                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| cM capacity (veh/h)               | 110                                                                               | 31                                                                                | 553                                                                               | 59                                                                                | 89                                                                                | 247                                                                               | 750                                                                                 | 278                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Volume Total                      | 0                                                                                 | 48                                                                                | 11                                                                                | 996                                                                               | 996                                                                               | 30                                                                                | 67                                                                                  | 460                                                                                 | 460                                                                                 |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Volume Left                       | 0                                                                                 | 3                                                                                 | 11                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 67                                                                                  | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Volume Right                      | 0                                                                                 | 45                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 30                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| cSH                               | 1700                                                                              | 263                                                                               | 750                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 278                                                                                 | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Volume to Capacity                | 0.00                                                                              | 0.18                                                                              | 0.01                                                                              | 0.59                                                                              | 0.59                                                                              | 0.02                                                                              | 0.24                                                                                | 0.27                                                                                | 0.27                                                                                |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Queue Length 95th (ft)            | 0                                                                                 | 16                                                                                | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 23                                                                                  | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Control Delay (s)                 | 0.0                                                                               | 25.8                                                                              | 9.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 22.0                                                                                | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Lane LOS                          | A                                                                                 | D                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Approach Delay (s)                | 0.0                                                                               | 25.8                                                                              | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 1.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Approach LOS                      | A                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 64.0%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | C |  |  |  |  |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |  |  |  |

# HCM Unsignalized Intersection Capacity Analysis

## 7: US 29 & Lake Saponi Drive

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |  |  |  |                                                                                   |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 42                                                                                | 2227                                                                              | 56                                                                                | 0                                                                                 | 1052                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 42                                                                                | 2227                                                                              | 56                                                                                | 0                                                                                 | 1052                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 44                                                                                | 2344                                                                              | 59                                                                                | 0                                                                                 | 1107                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | Raised                                                                            |                                                                                   | Raised                                                                            |                                                                                   |
| Median storage veh)               |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   | 2                                                                                 |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 2898                                                                              | 1172                                                                              |                                                                                   |                                                                                   | 2403                                                                              |                                                                                   |
| vC1, stage 1 conf vol             | 2344                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 554                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 2898                                                                              | 1172                                                                              |                                                                                   |                                                                                   | 2403                                                                              |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 77                                                                                |                                                                                   |                                                                                   | 100                                                                               |                                                                                   |
| cM capacity (veh/h)               | 58                                                                                | 188                                                                               |                                                                                   |                                                                                   | 202                                                                               |                                                                                   |
| Direction, Lane #                 | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              |
| Volume Total                      | 44                                                                                | 1172                                                                              | 1172                                                                              | 59                                                                                | 554                                                                               | 554                                                                               |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Volume Right                      | 44                                                                                | 0                                                                                 | 0                                                                                 | 59                                                                                | 0                                                                                 | 0                                                                                 |
| cSH                               | 188                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              |
| Volume to Capacity                | 0.23                                                                              | 0.69                                                                              | 0.69                                                                              | 0.03                                                                              | 0.33                                                                              | 0.33                                                                              |
| Queue Length 95th (ft)            | 22                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Control Delay (s)                 | 29.9                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Lane LOS                          | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 29.9                                                                              | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |
| Approach LOS                      | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 71.6%                                                                             |                                                                                   | ICU Level of Service                                                              | C                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 8: US 29 & Greene Edge Lane

08/10/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                   | 2289                                                                                | 0                                                                                   | 16                                                                                  | 1027                                                                                | 1                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                   | 2289                                                                                | 0                                                                                   | 16                                                                                  | 1027                                                                                | 1                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.97                                                                              | 0.92                                                                              | 0.97                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.97                                                                                | 0.97                                                                                | 0.92                                                                                | 0.92                                                                                | 0.97                                                                                | 0.97                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                   | 2360                                                                                | 0                                                                                   | 17                                                                                  | 1059                                                                                | 1                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Raised                                                                              |                                                                                     |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2276                                                                              | 3456                                                                              | 530                                                                               | 2926                                                                              | 3456                                                                              | 1180                                                                              | 1060                                                                                |                                                                                     |                                                                                     |                                                                                     | 2360                                                                                |                                                                                     |
| vC1, stage 1 conf vol             | 1094                                                                              | 1094                                                                              |                                                                                   | 2362                                                                              | 2362                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 1182                                                                              | 2362                                                                              |                                                                                   | 564                                                                               | 1094                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2276                                                                              | 3456                                                                              | 530                                                                               | 2926                                                                              | 3456                                                                              | 1180                                                                              | 1060                                                                                |                                                                                     |                                                                                     |                                                                                     | 2360                                                                                |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 92                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 136                                                                               | 48                                                                                | 499                                                                               | 35                                                                                | 63                                                                                | 183                                                                               | 665                                                                                 |                                                                                     |                                                                                     |                                                                                     | 204                                                                                 |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 0                                                                                 | 788                                                                               | 1573                                                                              | 546                                                                               | 530                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 0                                                                                 | 1                                                                                 | 0                                                                                 | 17                                                                                | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 1700                                                                              | 665                                                                               | 1700                                                                              | 204                                                                               | 1700                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.00                                                                              | 0.00                                                                              | 0.93                                                                              | 0.08                                                                              | 0.31                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 7                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 3.6                                                                               | 0.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 0.0                                                                               | 0.0                                                                               |                                                                                   | 1.8                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 0.6                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 67.3%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 9: US 29 &amp; Frays Mill Road

07/22/2021



| Lane Group              | EBT  | WBT   | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|-------|------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 75   | 139   | 144  | 2337  | 128  | 42   | 1082 | 9    |
| v/c Ratio               | 0.47 | 0.99  | 0.67 | 1.07  | 0.13 | 0.35 | 0.58 | 0.01 |
| Control Delay           | 38.9 | 108.1 | 48.9 | 68.6  | 4.4  | 50.9 | 34.8 | 0.0  |
| Queue Delay             | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 38.9 | 108.1 | 48.9 | 68.6  | 4.4  | 50.9 | 34.8 | 0.0  |
| Queue Length 50th (ft)  | 27   | 67    | 102  | ~1125 | 12   | 32   | 381  | 0    |
| Queue Length 95th (ft)  | 77   | #203  | m122 | #1267 | m16  | 71   | 475  | m0   |
| Internal Link Dist (ft) | 1259 | 1300  |      | 5774  |      |      | 2511 |      |
| Turn Bay Length (ft)    |      |       | 350  |       | 350  | 375  |      | 375  |
| Base Capacity (vph)     | 158  | 140   | 253  | 2182  | 1000 | 120  | 1871 | 909  |
| Starvation Cap Reductn  | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.47 | 0.99  | 0.57 | 1.07  | 0.13 | 0.35 | 0.58 | 0.01 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 9: US 29 & Frays Mill Road

07/22/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 21                                                                                | 13                                                                                | 40                                                                                | 40                                                                                | 11                                                                                | 85                                                                                | 141                                                                                 | 2290                                                                                | 125                                                                                 | 41                                                                                  | 1060                                                                                | 9                                                                                   |
| Future Volume (vph)               | 21                                                                                | 13                                                                                | 40                                                                                | 40                                                                                | 11                                                                                | 85                                                                                | 141                                                                                 | 2290                                                                                | 125                                                                                 | 41                                                                                  | 1060                                                                                | 9                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               |                                                                                   | 0.93                                                                              |                                                                                   |                                                                                   | 0.92                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   | 0.99                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                   | 1689                                                                              |                                                                                   |                                                                                   | 1652                                                                              |                                                                                   | 1787                                                                                | 3539                                                                                | 1538                                                                                | 1805                                                                                | 3471                                                                                | 1524                                                                                |
| Flt Permitted                     |                                                                                   | 0.86                                                                              |                                                                                   |                                                                                   | 0.64                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                   | 1469                                                                              |                                                                                   |                                                                                   | 1078                                                                              |                                                                                   | 1787                                                                                | 3539                                                                                | 1538                                                                                | 1805                                                                                | 3471                                                                                | 1524                                                                                |
| Peak-hour factor, PHF             | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                | 0.98                                                                                |
| Adj. Flow (vph)                   | 21                                                                                | 13                                                                                | 41                                                                                | 41                                                                                | 11                                                                                | 87                                                                                | 144                                                                                 | 2337                                                                                | 128                                                                                 | 42                                                                                  | 1082                                                                                | 9                                                                                   |
| RTOR Reduction (vph)              | 0                                                                                 | 36                                                                                | 0                                                                                 | 0                                                                                 | 50                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 52                                                                                  | 0                                                                                   | 0                                                                                   | 4                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 39                                                                                | 0                                                                                 | 0                                                                                 | 89                                                                                | 0                                                                                 | 144                                                                                 | 2337                                                                                | 76                                                                                  | 42                                                                                  | 1082                                                                                | 5                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 5%                                                                                | 0%                                                                                | 0%                                                                                | 6%                                                                                | 1%                                                                                  | 2%                                                                                  | 5%                                                                                  | 0%                                                                                  | 4%                                                                                  | 6%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 10.0                                                                              |                                                                                   | 14.5                                                                                | 71.6                                                                                | 71.6                                                                                | 6.4                                                                                 | 63.5                                                                                | 63.5                                                                                |
| Effective Green, g (s)            |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 10.0                                                                              |                                                                                   | 14.5                                                                                | 71.6                                                                                | 71.6                                                                                | 6.4                                                                                 | 63.5                                                                                | 63.5                                                                                |
| Actuated g/C Ratio                |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   | 0.08                                                                              |                                                                                   | 0.12                                                                                | 0.60                                                                                | 0.60                                                                                | 0.05                                                                                | 0.53                                                                                | 0.53                                                                                |
| Clearance Time (s)                |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 3.5                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 3.5                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                   | 97                                                                                |                                                                                   |                                                                                   | 89                                                                                |                                                                                   | 215                                                                                 | 2111                                                                                | 917                                                                                 | 96                                                                                  | 1836                                                                                | 806                                                                                 |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.08                                                                               | c0.66                                                                               | 0.05                                                                                | 0.02                                                                                | 0.31                                                                                | 0.00                                                                                |
| v/s Ratio Perm                    |                                                                                   | c0.03                                                                             |                                                                                   |                                                                                   | c0.08                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.40                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 0.67                                                                                | 1.11                                                                                | 0.08                                                                                | 0.44                                                                                | 0.59                                                                                | 0.01                                                                                |
| Uniform Delay, d1                 |                                                                                   | 53.7                                                                              |                                                                                   |                                                                                   | 55.0                                                                              |                                                                                   | 50.5                                                                                | 24.2                                                                                | 10.3                                                                                | 55.1                                                                                | 19.3                                                                                | 13.3                                                                                |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   | 0.81                                                                                | 1.34                                                                                | 2.40                                                                                | 0.80                                                                                | 1.66                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   | 93.5                                                                              |                                                                                   | 4.2                                                                                 | 52.3                                                                                | 0.1                                                                                 | 3.7                                                                                 | 1.4                                                                                 | 0.0                                                                                 |
| Delay (s)                         |                                                                                   | 57.3                                                                              |                                                                                   |                                                                                   | 148.4                                                                             |                                                                                   | 45.1                                                                                | 84.6                                                                                | 24.7                                                                                | 47.5                                                                                | 33.5                                                                                | 13.4                                                                                |
| Level of Service                  |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   | D                                                                                   | F                                                                                   | C                                                                                   | D                                                                                   | C                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 57.3                                                                              |                                                                                   |                                                                                   | 148.4                                                                             |                                                                                   |                                                                                     | 79.5                                                                                |                                                                                     |                                                                                     | 33.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | E                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 68.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 1.03                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     | 24.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 95.7%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 10: US 29 & Dickerson Road

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)            | 27                                                                                | 0                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 40                                                                                  | 2487                                                                                | 2                                                                                   | 1                                                                                   | 1092                                                                                | 16                                                                                  |
| Future Volume (Veh/h)             | 27                                                                                | 0                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 40                                                                                  | 2487                                                                                | 2                                                                                   | 1                                                                                   | 1092                                                                                | 16                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Hourly flow rate (vph)            | 28                                                                                | 0                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 42                                                                                  | 2591                                                                                | 2                                                                                   | 1                                                                                   | 1138                                                                                | 17                                                                                  |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 2520                                                                              | 3817                                                                              | 569                                                                               | 3261                                                                              | 3833                                                                              | 1296                                                                              | 1155                                                                                |                                                                                     |                                                                                     | 2593                                                                                |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 1140                                                                              | 1140                                                                              |                                                                                   | 2676                                                                              | 2676                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 1380                                                                              | 2677                                                                              |                                                                                   | 585                                                                               | 1157                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 2520                                                                              | 3817                                                                              | 569                                                                               | 3261                                                                              | 3833                                                                              | 1296                                                                              | 1155                                                                                |                                                                                     |                                                                                     | 2593                                                                                |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.7                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.2                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.7                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.6                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.3                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 73                                                                                | 100                                                                               | 97                                                                                | 100                                                                               | 100                                                                               | 100                                                                               | 93                                                                                  |                                                                                     |                                                                                     | 99                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 105                                                                               | 41                                                                                | 470                                                                               | 21                                                                                | 42                                                                                | 155                                                                               | 578                                                                                 |                                                                                     |                                                                                     | 170                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 42                                                                                | 0                                                                                 | 42                                                                                | 1727                                                                              | 866                                                                               | 1                                                                                 | 569                                                                                 | 569                                                                                 | 17                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 28                                                                                | 0                                                                                 | 42                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 14                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 2                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 17                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 142                                                                               | 1700                                                                              | 578                                                                               | 1700                                                                              | 1700                                                                              | 170                                                                               | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.30                                                                              | 0.00                                                                              | 0.07                                                                              | 1.02                                                                              | 0.51                                                                              | 0.01                                                                              | 0.33                                                                                | 0.33                                                                                | 0.01                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 29                                                                                | 0                                                                                 | 6                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 40.6                                                                              | 0.0                                                                               | 11.7                                                                              | 0.0                                                                               | 0.0                                                                               | 26.3                                                                              | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | E                                                                                 | A                                                                                 | B                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 40.6                                                                              | 0.0                                                                               | 0.2                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | E                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 11: US 29 &amp; Austin Drive

07/22/2021



| Lane Group              | EBL  | EBT  | NBL  | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 13   | 42   | 31   | 2606 | 1134 | 25   |
| v/c Ratio               | 0.12 | 0.13 | 0.27 | 0.86 | 0.42 | 0.02 |
| Control Delay           | 55.9 | 0.8  | 49.3 | 10.5 | 8.0  | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 55.9 | 0.8  | 49.3 | 10.5 | 8.0  | 0.0  |
| Queue Length 50th (ft)  | 10   | 0    | 25   | 261  | 120  | 0    |
| Queue Length 95th (ft)  | 31   | 0    | m29  | m457 | m234 | m0   |
| Internal Link Dist (ft) |      | 306  |      | 2056 | 2636 |      |
| Turn Bay Length (ft)    |      |      | 500  |      |      | 350  |
| Base Capacity (vph)     | 108  | 328  | 113  | 3026 | 2710 | 1174 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.12 | 0.13 | 0.27 | 0.86 | 0.42 | 0.02 |

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 11: US 29 & Austin Drive

07/22/2021

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)              | 12                                                                                | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 30                                                                                  | 2502                                                                                | 0                                                                                   | 0                                                                                   | 1089                                                                                | 24                                                                                  |
| Future Volume (vph)               | 12                                                                                | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 30                                                                                  | 2502                                                                                | 0                                                                                   | 0                                                                                   | 1089                                                                                | 24                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 0.85                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1805                                                                              | 1568                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1671                                                                                | 3539                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1468                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1805                                                                              | 1568                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1671                                                                                | 3539                                                                                |                                                                                     |                                                                                     | 3505                                                                                | 1468                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 12                                                                                | 0                                                                                 | 42                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 31                                                                                  | 2606                                                                                | 0                                                                                   | 0                                                                                   | 1134                                                                                | 25                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 7                                                                                   |
| Lane Group Flow (vph)             | 13                                                                                | 2                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 31                                                                                  | 2606                                                                                | 0                                                                                   | 0                                                                                   | 1134                                                                                | 18                                                                                  |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 3%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 8%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 10%                                                                                 |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Prot                                                                                | NA                                                                                  |                                                                                     |                                                                                     | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 5                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 5.8                                                                               | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 5.3                                                                                 | 99.7                                                                                |                                                                                     |                                                                                     | 86.9                                                                                | 86.9                                                                                |
| Effective Green, g (s)            | 5.8                                                                               | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 5.3                                                                                 | 99.7                                                                                |                                                                                     |                                                                                     | 86.9                                                                                | 86.9                                                                                |
| Actuated g/C Ratio                | 0.05                                                                              | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.04                                                                                | 0.83                                                                                |                                                                                     |                                                                                     | 0.72                                                                                | 0.72                                                                                |
| Clearance Time (s)                | 7.5                                                                               | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7.5                                                                                 | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 87                                                                                | 75                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 73                                                                                  | 2940                                                                                |                                                                                     |                                                                                     | 2538                                                                                | 1063                                                                                |
| v/s Ratio Prot                    | c0.01                                                                             | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.02                                                                                | c0.74                                                                               |                                                                                     |                                                                                     | 0.32                                                                                | 0.01                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.15                                                                              | 0.03                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.42                                                                                | 0.89                                                                                |                                                                                     |                                                                                     | 0.45                                                                                | 0.02                                                                                |
| Uniform Delay, d1                 | 54.7                                                                              | 54.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 55.9                                                                                | 6.5                                                                                 |                                                                                     |                                                                                     | 6.7                                                                                 | 4.6                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.89                                                                                | 1.25                                                                                |                                                                                     |                                                                                     | 1.11                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 0.8                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.5                                                                                 | 1.8                                                                                 |                                                                                     |                                                                                     | 0.5                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 55.5                                                                              | 54.6                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 51.1                                                                                | 9.9                                                                                 |                                                                                     |                                                                                     | 8.0                                                                                 | 4.6                                                                                 |
| Level of Service                  | E                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | D                                                                                   | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 54.8                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 10.4                                                                                |                                                                                     |                                                                                     | 7.9                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 10.3                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 29.0                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 97.5%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 12: US 29 &amp; Boulders Road

07/22/2021

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 21                                                                                | 27                                                                                | 93                                                                                | 91                                                                                | 92                                                                                | 97                                                                                | 139                                                                                | 2421                                                                                | 15                                                                                  | 6                                                                                   | 1115                                                                                | 38                                                                                  |
| v/c Ratio               | 0.22                                                                              | 0.14                                                                              | 0.33                                                                              | 0.91                                                                              | 0.92                                                                              | 0.34                                                                              | 0.67                                                                               | 0.99                                                                                | 0.01                                                                                | 0.03                                                                                | 0.58                                                                                | 0.04                                                                                |
| Control Delay           | 59.8                                                                              | 55.4                                                                              | 3.2                                                                               | 124.6                                                                             | 126.9                                                                             | 3.2                                                                               | 65.9                                                                               | 33.6                                                                                | 0.0                                                                                 | 39.3                                                                                | 31.5                                                                                | 0.1                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 59.8                                                                              | 55.4                                                                              | 3.2                                                                               | 124.6                                                                             | 126.9                                                                             | 3.2                                                                               | 65.9                                                                               | 33.6                                                                                | 0.0                                                                                 | 39.3                                                                                | 31.5                                                                                | 0.1                                                                                 |
| Queue Length 50th (ft)  | 17                                                                                | 10                                                                                | 0                                                                                 | 75                                                                                | 75                                                                                | 0                                                                                 | 104                                                                                | 786                                                                                 | 0                                                                                   | 2                                                                                   | 469                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | 47                                                                                | 28                                                                                | 0                                                                                 | #185                                                                              | #186                                                                              | 0                                                                                 | 169                                                                                | #1278                                                                               | 0                                                                                   | m6                                                                                  | 484                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 179                                                                               |                                                                                   |                                                                                   | 369                                                                               |                                                                                   |                                                                                    | 1679                                                                                |                                                                                     |                                                                                     | 2056                                                                                |                                                                                     |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   | 175                                                                               |                                                                                   |                                                                                   | 350                                                                               | 400                                                                                |                                                                                     | 300                                                                                 | 550                                                                                 |                                                                                     | 425                                                                                 |
| Base Capacity (vph)     | 95                                                                                | 193                                                                               | 279                                                                               | 100                                                                               | 100                                                                               | 286                                                                               | 259                                                                                | 2457                                                                                | 1168                                                                                | 204                                                                                 | 1928                                                                                | 957                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.22                                                                              | 0.14                                                                              | 0.33                                                                              | 0.91                                                                              | 0.92                                                                              | 0.34                                                                              | 0.54                                                                               | 0.99                                                                                | 0.01                                                                                | 0.03                                                                                | 0.58                                                                                | 0.04                                                                                |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 12: US 29 & Boulders Road

07/22/2021

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 43                                                                                | 5                                                                                 | 92                                                                                | 167                                                                               | 14                                                                                | 96                                                                                | 138                                                                                 | 2397                                                                                | 15                                                                                  | 6                                                                                   | 1104                                                                                | 38                                                                                  |
| Future Volume (vph)               | 43                                                                                | 5                                                                                 | 92                                                                                | 167                                                                               | 14                                                                                | 96                                                                                | 138                                                                                 | 2397                                                                                | 15                                                                                  | 6                                                                                   | 1104                                                                                | 38                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                 | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 | 0.91                                                                              | 0.91                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 0.97                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1643                                                                              | 3323                                                                              | 1495                                                                              | 1715                                                                              | 1732                                                                              | 1615                                                                              | 1752                                                                                | 3539                                                                                | 1615                                                                                | 3502                                                                                | 3505                                                                                | 1568                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1643                                                                              | 3323                                                                              | 1495                                                                              | 1715                                                                              | 1732                                                                              | 1615                                                                              | 1752                                                                                | 3539                                                                                | 1615                                                                                | 3502                                                                                | 3505                                                                                | 1568                                                                                |
| Peak-hour factor, PHF             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Adj. Flow (vph)                   | 43                                                                                | 5                                                                                 | 93                                                                                | 169                                                                               | 14                                                                                | 97                                                                                | 139                                                                                 | 2421                                                                                | 15                                                                                  | 6                                                                                   | 1115                                                                                | 38                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 88                                                                                | 0                                                                                 | 0                                                                                 | 91                                                                                | 0                                                                                   | 0                                                                                   | 5                                                                                   | 0                                                                                   | 0                                                                                   | 17                                                                                  |
| Lane Group Flow (vph)             | 21                                                                                | 27                                                                                | 5                                                                                 | 91                                                                                | 92                                                                                | 6                                                                                 | 139                                                                                 | 2421                                                                                | 10                                                                                  | 6                                                                                   | 1115                                                                                | 21                                                                                  |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 8%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 3%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 3%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | Prot                                                                              | Split                                                                             | NA                                                                                | Prot                                                                              | Prot                                                                                | NA                                                                                  | Prot                                                                                | Prot                                                                                | NA                                                                                  | Prot                                                                                |
| Protected Phases                  | 4                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 5                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 14.3                                                                                | 78.2                                                                                | 78.2                                                                                | 1.4                                                                                 | 66.0                                                                                | 66.0                                                                                |
| Effective Green, g (s)            | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 14.3                                                                                | 78.2                                                                                | 78.2                                                                                | 1.4                                                                                 | 66.0                                                                                | 66.0                                                                                |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.12                                                                                | 0.65                                                                                | 0.65                                                                                | 0.01                                                                                | 0.55                                                                                | 0.55                                                                                |
| Clearance Time (s)                | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 6.9                                                                               | 5.9                                                                                 | 6.2                                                                                 | 6.2                                                                                 | 6.4                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 95                                                                                | 193                                                                               | 87                                                                                | 100                                                                               | 101                                                                               | 94                                                                                | 208                                                                                 | 2306                                                                                | 1052                                                                                | 40                                                                                  | 1927                                                                                | 862                                                                                 |
| v/s Ratio Prot                    | c0.01                                                                             | 0.01                                                                              | 0.00                                                                              | 0.05                                                                              | c0.05                                                                             | 0.00                                                                              | c0.08                                                                               | c0.68                                                                               | 0.01                                                                                | 0.00                                                                                | 0.32                                                                                | 0.01                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.22                                                                              | 0.14                                                                              | 0.06                                                                              | 0.91                                                                              | 0.91                                                                              | 0.06                                                                              | 0.67                                                                                | 1.05                                                                                | 0.01                                                                                | 0.15                                                                                | 0.58                                                                                | 0.02                                                                                |
| Uniform Delay, d1                 | 53.9                                                                              | 53.6                                                                              | 53.4                                                                              | 56.2                                                                              | 56.2                                                                              | 53.4                                                                              | 50.6                                                                                | 20.9                                                                                | 7.3                                                                                 | 58.7                                                                                | 17.8                                                                                | 12.3                                                                                |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.73                                                                                | 1.64                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 1.2                                                                               | 0.3                                                                               | 0.3                                                                               | 61.7                                                                              | 61.5                                                                              | 0.3                                                                               | 7.9                                                                                 | 33.5                                                                                | 0.0                                                                                 | 1.6                                                                                 | 1.2                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 55.1                                                                              | 54.0                                                                              | 53.7                                                                              | 117.9                                                                             | 117.7                                                                             | 53.7                                                                              | 58.5                                                                                | 54.4                                                                                | 7.3                                                                                 | 44.5                                                                                | 30.4                                                                                | 12.4                                                                                |
| Level of Service                  | E                                                                                 | D                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 | D                                                                                 | E                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   | C                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 54.0                                                                              |                                                                                   |                                                                                   | 95.6                                                                              |                                                                                   |                                                                                     | 54.3                                                                                |                                                                                     |                                                                                     | 29.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 50.3                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 26.4                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 100.0%                                                                            |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | G                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 13: US 29 & Camelot Drive

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 3                                                                                 | 0                                                                                 | 37                                                                                | 12                                                                                | 0                                                                                 | 16                                                                                | 87                                                                                  | 2522                                                                                | 5                                                                                   | 1                                                                                   | 1369                                                                                | 7                                                                                   |
| Future Volume (Veh/h)             | 3                                                                                 | 0                                                                                 | 37                                                                                | 12                                                                                | 0                                                                                 | 16                                                                                | 87                                                                                  | 2522                                                                                | 5                                                                                   | 1                                                                                   | 1369                                                                                | 7                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Hourly flow rate (vph)            | 3                                                                                 | 0                                                                                 | 40                                                                                | 13                                                                                | 0                                                                                 | 17                                                                                | 94                                                                                  | 2712                                                                                | 5                                                                                   | 1                                                                                   | 1472                                                                                | 8                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Raised                                                                              |                                                                                     | Raised                                                                              |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 3035                                                                              | 4379                                                                              | 736                                                                               | 3678                                                                              | 4382                                                                              | 1356                                                                              | 1480                                                                                |                                                                                     |                                                                                     | 2717                                                                                |                                                                                     |                                                                                     |
| vC1, stage 1 conf vol             | 1474                                                                              | 1474                                                                              |                                                                                   | 2900                                                                              | 2900                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             | 1561                                                                              | 2905                                                                              |                                                                                   | 778                                                                               | 1482                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 3035                                                                              | 4379                                                                              | 736                                                                               | 3678                                                                              | 4382                                                                              | 1356                                                                              | 1480                                                                                |                                                                                     |                                                                                     | 2717                                                                                |                                                                                     |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.0                                                                               | 7.5                                                                               | 6.5                                                                               | 7.2                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |                                                                                     |
| tC, 2 stage (s)                   | 6.5                                                                               | 5.5                                                                               |                                                                                   | 6.5                                                                               | 5.5                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.4                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |
| p0 queue free %                   | 95                                                                                | 100                                                                               | 89                                                                                | 0                                                                                 | 100                                                                               | 86                                                                                | 79                                                                                  |                                                                                     |                                                                                     | 99                                                                                  |                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 66                                                                                | 26                                                                                | 359                                                                               | 13                                                                                | 26                                                                                | 125                                                                               | 456                                                                                 |                                                                                     |                                                                                     | 152                                                                                 |                                                                                     |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              | SB 1                                                                                | SB 2                                                                                | SB 3                                                                                | SB 4                                                                                |                                                                                     |                                                                                     |
| Volume Total                      | 43                                                                                | 30                                                                                | 94                                                                                | 1356                                                                              | 1356                                                                              | 5                                                                                 | 1                                                                                   | 736                                                                                 | 736                                                                                 | 8                                                                                   |                                                                                     |                                                                                     |
| Volume Left                       | 3                                                                                 | 13                                                                                | 94                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 40                                                                                | 17                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 274                                                                               | 26                                                                                | 456                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 152                                                                                 | 1700                                                                                | 1700                                                                                | 1700                                                                                |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.16                                                                              | 1.16                                                                              | 0.21                                                                              | 0.80                                                                              | 0.80                                                                              | 0.00                                                                              | 0.01                                                                                | 0.43                                                                                | 0.43                                                                                | 0.00                                                                                |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 14                                                                                | 91                                                                                | 19                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 20.6                                                                              | 452.7                                                                             | 14.9                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 28.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lane LOS                          | C                                                                                 | F                                                                                 | B                                                                                 | D                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 20.6                                                                              | 452.7                                                                             | 0.5                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 84.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 18: US 29 & Airport Acres Rd South

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |  |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 1                                                                                 | 9                                                                                 | 23                                                                                | 2570                                                                              | 1587                                                                              | 0                                                                                 |
| Future Volume (Veh/h)             | 1                                                                                 | 9                                                                                 | 23                                                                                | 2570                                                                              | 1587                                                                              | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Hourly flow rate (vph)            | 1                                                                                 | 9                                                                                 | 24                                                                                | 2649                                                                              | 1636                                                                              | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | Raised                                                                            | Raised                                                                            |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 872                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.45                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 3008                                                                              | 818                                                                               | 1636                                                                              |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             | 1636                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             | 1372                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 3019                                                                              | 818                                                                               | 1636                                                                              |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 7.1                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   | 5.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.4                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 99                                                                                | 97                                                                                | 94                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 133                                                                               | 303                                                                               | 402                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              |
| Volume Total                      | 10                                                                                | 24                                                                                | 1324                                                                              | 1324                                                                              | 818                                                                               | 818                                                                               |
| Volume Left                       | 1                                                                                 | 24                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Volume Right                      | 9                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| cSH                               | 269                                                                               | 402                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              | 1700                                                                              |
| Volume to Capacity                | 0.04                                                                              | 0.06                                                                              | 0.78                                                                              | 0.78                                                                              | 0.48                                                                              | 0.48                                                                              |
| Queue Length 95th (ft)            | 3                                                                                 | 5                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Control Delay (s)                 | 18.9                                                                              | 14.5                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Lane LOS                          | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 18.9                                                                              | 0.1                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 81.0%                                                                             |                                                                                   | ICU Level of Service                                                              | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

## 19: US 29 &amp; Airport Road

07/22/2021



| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|-------------------------|-------|-------|------|-------|-------|------|-------|------|-------|------|------|
| Lane Group Flow (vph)   | 150   | 106   | 198  | 144   | 261   | 119  | 2558  | 207  | 198   | 1383 | 109  |
| v/c Ratio               | 1.03  | 1.04  | 0.33 | 1.22  | 1.37  | 0.53 | 1.31  | 0.18 | 1.26  | 0.69 | 0.10 |
| Control Delay           | 143.7 | 158.6 | 21.6 | 203.0 | 228.2 | 67.7 | 172.0 | 3.8  | 205.4 | 21.3 | 1.3  |
| Queue Delay             | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  |
| Total Delay             | 143.7 | 158.6 | 21.6 | 203.0 | 228.2 | 67.7 | 172.0 | 3.8  | 205.4 | 21.3 | 1.3  |
| Queue Length 50th (ft)  | ~69   | ~96   | 35   | ~148  | ~241  | 51   | ~1458 | 27   | ~209  | 411  | 0    |
| Queue Length 95th (ft)  | #142  | #218  | 74   | #286  | #418  | 84   | #1586 | 53   | #366  | 492  | 17   |
| Internal Link Dist (ft) |       | 677   |      |       | 627   |      | 911   |      |       | 792  |      |
| Turn Bay Length (ft)    | 425   |       | 450  | 570   |       | 575  |       | 430  | 475   |      | 540  |
| Base Capacity (vph)     | 145   | 102   | 615  | 118   | 191   | 235  | 1949  | 1120 | 157   | 2016 | 1104 |
| Starvation Cap Reductn  | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0    | 0     | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0    | 0     | 0    | 0    |
| Storage Cap Reductn     | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0    | 0     | 0    | 0    |
| Reduced v/c Ratio       | 1.03  | 1.04  | 0.32 | 1.22  | 1.37  | 0.51 | 1.31  | 0.18 | 1.26  | 0.69 | 0.10 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 19: US 29 & Airport Road

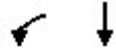
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|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)              | 144                                                                               | 102                                                                               | 190                                                                               | 138                                                                               | 83                                                                                | 168                                                                               | 114                                                                                | 2456                                                                                | 199                                                                                 | 190                                                                                 | 1328                                                                                | 105                                                                                 |
| Future Volume (vph)               | 144                                                                               | 102                                                                               | 190                                                                               | 138                                                                               | 83                                                                                | 168                                                                               | 114                                                                                | 2456                                                                                | 199                                                                                 | 190                                                                                 | 1328                                                                                | 105                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 10.5                                                                              | 6.7                                                                               | 6.7                                                                               | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                | 5.7                                                                                 | 5.7                                                                                 | 8.1                                                                                 | 5.7                                                                                 | 5.7                                                                                 |
| Lane Util. Factor                 | 0.97                                                                              | 1.00                                                                              | 0.88                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.97                                                                               | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 0.90                                                                              |                                                                                   | 1.00                                                                               | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 3433                                                                              | 1827                                                                              | 2787                                                                              | 1736                                                                              | 1692                                                                              |                                                                                   | 3433                                                                               | 3505                                                                                | 1568                                                                                | 1719                                                                                | 3471                                                                                | 1524                                                                                |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                               | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 3433                                                                              | 1827                                                                              | 2787                                                                              | 1736                                                                              | 1692                                                                              |                                                                                   | 3433                                                                               | 3505                                                                                | 1568                                                                                | 1719                                                                                | 3471                                                                                | 1524                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                               | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 150                                                                               | 106                                                                               | 198                                                                               | 144                                                                               | 86                                                                                | 175                                                                               | 119                                                                                | 2558                                                                                | 207                                                                                 | 198                                                                                 | 1383                                                                                | 109                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 92                                                                                | 0                                                                                 | 56                                                                                | 0                                                                                 | 0                                                                                  | 0                                                                                   | 33                                                                                  | 0                                                                                   | 0                                                                                   | 36                                                                                  |
| Lane Group Flow (vph)             | 150                                                                               | 106                                                                               | 106                                                                               | 144                                                                               | 205                                                                               | 0                                                                                 | 119                                                                                | 2558                                                                                | 174                                                                                 | 198                                                                                 | 1383                                                                                | 73                                                                                  |
| Heavy Vehicles (%)                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 4%                                                                                | 3%                                                                                | 0%                                                                                | 2%                                                                                 | 3%                                                                                  | 3%                                                                                  | 5%                                                                                  | 4%                                                                                  | 6%                                                                                  |
| Turn Type                         | Prot                                                                              | NA                                                                                | pt+ov                                                                             | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                               | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  | pt+ov                                                                               |
| Protected Phases                  | 7                                                                                 | 4                                                                                 | 4 5                                                                               | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                  | 2                                                                                   | 2 3                                                                                 | 1                                                                                   | 6                                                                                   | 6 7                                                                                 |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 5.5                                                                               | 7.3                                                                               | 22.5                                                                              | 8.9                                                                               | 10.4                                                                              |                                                                                   | 8.5                                                                                | 72.3                                                                                | 86.9                                                                                | 11.9                                                                                | 75.5                                                                                | 86.7                                                                                |
| Effective Green, g (s)            | 5.5                                                                               | 7.3                                                                               | 22.5                                                                              | 8.9                                                                               | 10.4                                                                              |                                                                                   | 8.5                                                                                | 72.3                                                                                | 86.9                                                                                | 11.9                                                                                | 75.5                                                                                | 86.7                                                                                |
| Actuated g/C Ratio                | 0.04                                                                              | 0.06                                                                              | 0.17                                                                              | 0.07                                                                              | 0.08                                                                              |                                                                                   | 0.07                                                                               | 0.56                                                                                | 0.67                                                                                | 0.09                                                                                | 0.58                                                                                | 0.67                                                                                |
| Clearance Time (s)                | 10.5                                                                              | 6.7                                                                               |                                                                                   | 9.1                                                                               | 5.6                                                                               |                                                                                   | 8.3                                                                                | 5.7                                                                                 |                                                                                     | 8.1                                                                                 | 5.7                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 145                                                                               | 102                                                                               | 482                                                                               | 118                                                                               | 135                                                                               |                                                                                   | 224                                                                                | 1949                                                                                | 1048                                                                                | 157                                                                                 | 2015                                                                                | 1016                                                                                |
| v/s Ratio Prot                    | 0.04                                                                              | 0.06                                                                              | 0.04                                                                              | c0.08                                                                             | c0.12                                                                             |                                                                                   | 0.03                                                                               | c0.73                                                                               | 0.11                                                                                | c0.12                                                                               | c0.40                                                                               | 0.05                                                                                |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 1.03                                                                              | 1.04                                                                              | 0.22                                                                              | 1.22                                                                              | 1.52                                                                              |                                                                                   | 0.53                                                                               | 1.31                                                                                | 0.17                                                                                | 1.26                                                                                | 0.69                                                                                | 0.07                                                                                |
| Uniform Delay, d1                 | 62.2                                                                              | 61.4                                                                              | 46.2                                                                              | 60.5                                                                              | 59.8                                                                              |                                                                                   | 58.8                                                                               | 28.9                                                                                | 8.0                                                                                 | 59.0                                                                                | 19.0                                                                                | 7.6                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 84.2                                                                              | 100.1                                                                             | 0.2                                                                               | 153.7                                                                             | 267.0                                                                             |                                                                                   | 2.4                                                                                | 144.4                                                                               | 0.1                                                                                 | 158.6                                                                               | 1.9                                                                                 | 0.0                                                                                 |
| Delay (s)                         | 146.4                                                                             | 161.4                                                                             | 46.4                                                                              | 214.2                                                                             | 326.8                                                                             |                                                                                   | 61.2                                                                               | 173.2                                                                               | 8.1                                                                                 | 217.6                                                                               | 20.9                                                                                | 7.6                                                                                 |
| Level of Service                  | F                                                                                 | F                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 |                                                                                   | E                                                                                  | F                                                                                   | A                                                                                   | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay (s)                |                                                                                   | 106.3                                                                             |                                                                                   |                                                                                   | 286.8                                                                             |                                                                                   |                                                                                    | 156.8                                                                               |                                                                                     |                                                                                     | 43.1                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                    | F                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 126.9                                                                             |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                    |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.37                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 130.0                                                                             |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                    |                                                                                     | 30.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 120.2%                                                                            |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                    |                                                                                     | H                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>c Critical Lane Group</b>      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queues

## 140: US 29 (S) &amp; Lewis and Clark U-Turn N

07/22/2021



| Lane Group              | WBL  | SBT  |
|-------------------------|------|------|
| Lane Group Flow (vph)   | 30   | 1609 |
| v/c Ratio               | 0.21 | 0.50 |
| Control Delay           | 4.6  | 1.7  |
| Queue Delay             | 0.0  | 0.0  |
| Total Delay             | 4.6  | 1.7  |
| Queue Length 50th (ft)  | 0    | 93   |
| Queue Length 95th (ft)  | m0   | 115  |
| Internal Link Dist (ft) | 23   | 492  |
| Turn Bay Length (ft)    |      |      |
| Base Capacity (vph)     | 342  | 3218 |
| Starvation Cap Reductn  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    |
| Reduced v/c Ratio       | 0.09 | 0.50 |

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 140: US 29 (S) & Lewis and Clark U-Turn N

07/22/2021

|                                   |  |  |  |  |  |                                                                                    |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                                                                                                                 |
| Lane Configurations               |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |   |
| Traffic Volume (vph)              | 28                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1480                                                                                                                                                                |
| Future Volume (vph)               | 28                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1480                                                                                                                                                                |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                |
| Total Lost time (s)               | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                                                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                                                                                                                |
| Frt                               | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |
| Flt Protected                     | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |
| Satd. Flow (prot)                 | 1770                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3471                                                                                                                                                                |
| Flt Permitted                     | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |
| Satd. Flow (perm)                 | 1770                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3471                                                                                                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                |
| Adj. Flow (vph)                   | 30                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1609                                                                                                                                                                |
| RTOR Reduction (vph)              | 29                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   |
| Lane Group Flow (vph)             | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1609                                                                                                                                                                |
| Heavy Vehicles (%)                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 0%                                                                                | 4%                                                                                                                                                                  |
| Turn Type                         | Prot                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | NA                                                                                                                                                                  |
| Protected Phases                  | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Actuated Green, G (s)             | 3.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 107.7                                                                                                                                                               |
| Effective Green, g (s)            | 3.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 107.7                                                                                                                                                               |
| Actuated g/C Ratio                | 0.03                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.90                                                                                                                                                                |
| Clearance Time (s)                | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                                                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                                                                                                                 |
| Lane Grp Cap (vph)                | 48                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3115                                                                                                                                                                |
| v/s Ratio Prot                    | c0.00                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.46                                                                                                                                                               |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| v/c Ratio                         | 0.02                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.52                                                                                                                                                                |
| Uniform Delay, d1                 | 56.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.2                                                                                                                                                                 |
| Progression Factor                | 2.97                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                                                                                                                |
| Incremental Delay, d2             | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.6                                                                                                                                                                 |
| Delay (s)                         | 168.7                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.8                                                                                                                                                                 |
| Level of Service                  | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | A                                                                                                                                                                   |
| Approach Delay (s)                | 168.7                                                                             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 1.8                                                                                                                                                                 |
| Approach LOS                      | F                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                                                                                                   |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   | HCM 2000 Level of Service                                                         | A                                                                                                                                                                   |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.50                                                                              |                                                                                   |                                                                                   |                                                                                                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 9.0                                                                                                                                                                 |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 124.2%                                                                            |                                                                                   | ICU Level of Service                                                              | H                                                                                                                                                                   |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 141: US 29 (N) & Lewis and Clark U-Turn N

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 28                                                                                | 2758                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 28                                                                                | 2758                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 30                                                                                | 2998                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 861                                                                               |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.15                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1559                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 98                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 146                                                                               | 1084                                                                              | 1622                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 30                                                                                | 1499                                                                              | 1499                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 30                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1622                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.02                                                                              | 0.88                                                                              | 0.88                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.3                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 124.2%                                                                            |                                                                                   | ICU Level of Service                                                              |                                                                                   | H                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

142: US 29 (S)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 36                                                                                | 1507                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 36                                                                                | 1507                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 38                                                                                | 1570                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   | 295                                                                               |                                                                                   |                                                                                   | 850                                                                               |
| pX, platoon unblocked             | 0.90                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 861                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 628                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 98                                                                                |                                                                                   |
| cM capacity (veh/h)               | 366                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1636                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 38                                                                                | 785                                                                               | 785                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 38                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.02                                                                              | 0.46                                                                              | 0.46                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 2                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.3                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 52.6%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | A                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

## Queues

### 143: North Pointe Access 2 & US 29 (N)

07/22/2021



| Lane Group              | EBT  | WBR  | NBT  | NBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 38   | 56   | 2873 | 71   |
| v/c Ratio               | 0.31 | 0.29 | 0.92 | 0.05 |
| Control Delay           | 59.7 | 45.1 | 4.8  | 0.6  |
| Queue Delay             | 0.0  | 0.0  | 0.3  | 0.0  |
| Total Delay             | 59.7 | 45.1 | 5.1  | 0.6  |
| Queue Length 50th (ft)  | 29   | 18   | 247  | 1    |
| Queue Length 95th (ft)  | m0   | 40   | m225 | m1   |
| Internal Link Dist (ft) | 27   |      | 197  |      |
| Turn Bay Length (ft)    |      |      |      | 400  |
| Base Capacity (vph)     | 285  | 429  | 3126 | 1407 |
| Starvation Cap Reductn  | 0    | 0    | 38   | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.13 | 0.13 | 0.93 | 0.05 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

143: North Pointe Access 2 & US 29 (N)

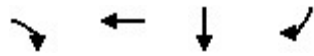
07/22/2021

|                                   |  |        |      |      |      |                           |      |       |       |      |      |      |
|-----------------------------------|------------------------------------------------------------------------------------|--------|------|------|------|---------------------------|------|-------|-------|------|------|------|
| Movement                          | EBL                                                                                | EBT    | EBR  | WBL  | WBT  | WBR                       | NBL  | NBT   | NBR   | SBL  | SBT  | SBR  |
| Lane Configurations               |                                                                                    | ↖      |      |      |      | ↗                         |      | ↗     | ↗     |      |      |      |
| Traffic Volume (vph)              | 0                                                                                  | 36     | 0    | 0    | 0    | 54                        | 0    | 2758  | 68    | 0    | 0    | 0    |
| Future Volume (vph)               | 0                                                                                  | 36     | 0    | 0    | 0    | 54                        | 0    | 2758  | 68    | 0    | 0    | 0    |
| Ideal Flow (vphpl)                | 1900                                                                               | 1900   | 1900 | 1900 | 1900 | 1900                      | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)               |                                                                                    | 4.5    |      |      |      | 4.5                       |      | 4.5   | 4.5   |      |      |      |
| Lane Util. Factor                 |                                                                                    | 1.00   |      |      |      | 0.88                      |      | 0.95  | 1.00  |      |      |      |
| Frt                               |                                                                                    | 1.00   |      |      |      | 0.85                      |      | 1.00  | 0.85  |      |      |      |
| Flt Protected                     |                                                                                    | 1.00   |      |      |      | 1.00                      |      | 1.00  | 1.00  |      |      |      |
| Satd. Flow (prot)                 |                                                                                    | 1900   |      |      |      | 2787                      |      | 3539  | 1583  |      |      |      |
| Flt Permitted                     |                                                                                    | 1.00   |      |      |      | 1.00                      |      | 1.00  | 1.00  |      |      |      |
| Satd. Flow (perm)                 |                                                                                    | 1900   |      |      |      | 2787                      |      | 3539  | 1583  |      |      |      |
| Peak-hour factor, PHF             | 0.96                                                                               | 0.96   | 0.96 | 0.96 | 0.96 | 0.96                      | 0.96 | 0.96  | 0.96  | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph)                   | 0                                                                                  | 38     | 0    | 0    | 0    | 56                        | 0    | 2873  | 71    | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0                                                                                  | 0      | 0    | 0    | 0    | 13                        | 0    | 0     | 9     | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0                                                                                  | 38     | 0    | 0    | 0    | 43                        | 0    | 2873  | 62    | 0    | 0    | 0    |
| Heavy Vehicles (%)                | 0%                                                                                 | 0%     | 0%   | 2%   | 2%   | 2%                        | 0%   | 2%    | 2%    | 2%   | 2%   | 2%   |
| Turn Type                         |                                                                                    | NA     |      |      |      | Perm                      |      | NA    | Perm  |      |      |      |
| Protected Phases                  |                                                                                    | 4      |      |      |      |                           |      | 2     |       |      |      |      |
| Permitted Phases                  | 4                                                                                  |        |      |      |      | 8                         |      |       | 2     |      |      |      |
| Actuated Green, G (s)             |                                                                                    | 6.8    |      |      |      | 6.8                       |      | 104.2 | 104.2 |      |      |      |
| Effective Green, g (s)            |                                                                                    | 6.8    |      |      |      | 6.8                       |      | 104.2 | 104.2 |      |      |      |
| Actuated g/C Ratio                |                                                                                    | 0.06   |      |      |      | 0.06                      |      | 0.87  | 0.87  |      |      |      |
| Clearance Time (s)                |                                                                                    | 4.5    |      |      |      | 4.5                       |      | 4.5   | 4.5   |      |      |      |
| Vehicle Extension (s)             |                                                                                    | 3.0    |      |      |      | 3.0                       |      | 3.0   | 3.0   |      |      |      |
| Lane Grp Cap (vph)                |                                                                                    | 107    |      |      |      | 157                       |      | 3073  | 1374  |      |      |      |
| v/s Ratio Prot                    |                                                                                    | c0.02  |      |      |      |                           |      | c0.81 |       |      |      |      |
| v/s Ratio Perm                    |                                                                                    |        |      |      |      | 0.02                      |      |       | 0.04  |      |      |      |
| v/c Ratio                         |                                                                                    | 0.36   |      |      |      | 0.27                      |      | 0.93  | 0.04  |      |      |      |
| Uniform Delay, d1                 |                                                                                    | 54.5   |      |      |      | 54.2                      |      | 5.5   | 1.1   |      |      |      |
| Progression Factor                |                                                                                    | 1.03   |      |      |      | 1.00                      |      | 0.50  | 1.50  |      |      |      |
| Incremental Delay, d2             |                                                                                    | 1.8    |      |      |      | 0.9                       |      | 0.7   | 0.0   |      |      |      |
| Delay (s)                         |                                                                                    | 57.7   |      |      |      | 55.2                      |      | 3.5   | 1.6   |      |      |      |
| Level of Service                  |                                                                                    | E      |      |      |      | E                         |      | A     | A     |      |      |      |
| Approach Delay (s)                |                                                                                    | 57.7   |      |      | 55.2 |                           |      | 3.5   |       |      | 0.0  |      |
| Approach LOS                      |                                                                                    | E      |      |      | E    |                           |      | A     |       |      | A    |      |
| <b>Intersection Summary</b>       |                                                                                    |        |      |      |      |                           |      |       |       |      |      |      |
| HCM 2000 Control Delay            |                                                                                    | 5.1    |      |      |      | HCM 2000 Level of Service |      | A     |       |      |      |      |
| HCM 2000 Volume to Capacity ratio |                                                                                    | 0.90   |      |      |      |                           |      |       |       |      |      |      |
| Actuated Cycle Length (s)         |                                                                                    | 120.0  |      |      |      | Sum of lost time (s)      |      | 9.0   |       |      |      |      |
| Intersection Capacity Utilization |                                                                                    | 128.9% |      |      |      | ICU Level of Service      |      | H     |       |      |      |      |
| Analysis Period (min)             |                                                                                    | 15     |      |      |      |                           |      |       |       |      |      |      |
| c Critical Lane Group             |                                                                                    |        |      |      |      |                           |      |       |       |      |      |      |

## Queues

## 144: US 29 (S) &amp; Lewis and Clark Dr

07/22/2021



| Lane Group              | EBR  | WBT  | SBT  | SBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 255  | 22   | 1520 | 50   |
| v/c Ratio               | 0.71 | 0.16 | 0.53 | 0.04 |
| Control Delay           | 38.0 | 40.0 | 3.4  | 0.7  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 38.0 | 40.0 | 3.4  | 0.7  |
| Queue Length 50th (ft)  | 57   | 15   | 102  | 0    |
| Queue Length 95th (ft)  | 103  | m14  | 115  | m4   |
| Internal Link Dist (ft) |      | 36   | 215  |      |
| Turn Bay Length (ft)    |      |      |      | 450  |
| Base Capacity (vph)     | 588  | 263  | 2888 | 1300 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.43 | 0.08 | 0.53 | 0.04 |

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

144: US 29 (S) & Lewis and Clark Dr

07/22/2021

|                                   |  |      |        |      |      |      |      |      |      |      |       |      |
|-----------------------------------|------------------------------------------------------------------------------------|------|--------|------|------|------|------|------|------|------|-------|------|
| Movement                          | EBL                                                                                | EBT  | EBR    | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
| Lane Configurations               |                                                                                    |      | TT     |      | T    |      |      |      |      |      | TT    | T    |
| Traffic Volume (vph)              | 0                                                                                  | 0    | 245    | 0    | 21   | 0    | 0    | 0    | 0    | 0    | 1459  | 48   |
| Future Volume (vph)               | 0                                                                                  | 0    | 245    | 0    | 21   | 0    | 0    | 0    | 0    | 0    | 1459  | 48   |
| Ideal Flow (vphpl)                | 1900                                                                               | 1900 | 1900   | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |                                                                                    |      | 4.5    |      | 4.5  |      |      |      |      |      | 4.5   | 4.5  |
| Lane Util. Factor                 |                                                                                    |      | 0.88   |      | 1.00 |      |      |      |      |      | 0.95  | 1.00 |
| Frt                               |                                                                                    |      | 0.85   |      | 1.00 |      |      |      |      |      | 1.00  | 0.85 |
| Flt Protected                     |                                                                                    |      | 1.00   |      | 1.00 |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |                                                                                    |      | 2515   |      | 1348 |      |      |      |      |      | 3505  | 1568 |
| Flt Permitted                     |                                                                                    |      | 1.00   |      | 1.00 |      |      |      |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |                                                                                    |      | 2515   |      | 1348 |      |      |      |      |      | 3505  | 1568 |
| Peak-hour factor, PHF             | 0.96                                                                               | 0.96 | 0.96   | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96  | 0.96 |
| Adj. Flow (vph)                   | 0                                                                                  | 0    | 255    | 0    | 22   | 0    | 0    | 0    | 0    | 0    | 1520  | 50   |
| RTOR Reduction (vph)              | 0                                                                                  | 0    | 107    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 9    |
| Lane Group Flow (vph)             | 0                                                                                  | 0    | 148    | 0    | 22   | 0    | 0    | 0    | 0    | 0    | 1520  | 41   |
| Heavy Vehicles (%)                | 0%                                                                                 | 0%   | 13%    | 0%   | 41%  | 0%   | 2%   | 2%   | 2%   | 0%   | 3%    | 3%   |
| Turn Type                         |                                                                                    |      | Perm   |      | NA   |      |      |      |      |      | NA    | Perm |
| Protected Phases                  |                                                                                    |      |        |      | 8    |      |      |      |      |      | 6     |      |
| Permitted Phases                  |                                                                                    |      | 4      | 8    |      |      |      |      |      |      |       | 6    |
| Actuated Green, G (s)             |                                                                                    |      | 12.1   |      | 12.1 |      |      |      |      |      | 98.9  | 98.9 |
| Effective Green, g (s)            |                                                                                    |      | 12.1   |      | 12.1 |      |      |      |      |      | 98.9  | 98.9 |
| Actuated g/C Ratio                |                                                                                    |      | 0.10   |      | 0.10 |      |      |      |      |      | 0.82  | 0.82 |
| Clearance Time (s)                |                                                                                    |      | 4.5    |      | 4.5  |      |      |      |      |      | 4.5   | 4.5  |
| Vehicle Extension (s)             |                                                                                    |      | 3.0    |      | 3.0  |      |      |      |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                |                                                                                    |      | 253    |      | 135  |      |      |      |      |      | 2888  | 1292 |
| v/s Ratio Prot                    |                                                                                    |      |        |      | 0.02 |      |      |      |      |      | c0.43 |      |
| v/s Ratio Perm                    |                                                                                    |      | c0.06  |      |      |      |      |      |      |      |       | 0.03 |
| v/c Ratio                         |                                                                                    |      | 0.58   |      | 0.16 |      |      |      |      |      | 0.53  | 0.03 |
| Uniform Delay, d1                 |                                                                                    |      | 51.6   |      | 49.3 |      |      |      |      |      | 3.3   | 1.9  |
| Progression Factor                |                                                                                    |      | 1.00   |      | 0.84 |      |      |      |      |      | 0.75  | 0.81 |
| Incremental Delay, d2             |                                                                                    |      | 3.4    |      | 0.1  |      |      |      |      |      | 0.6   | 0.0  |
| Delay (s)                         |                                                                                    |      | 55.0   |      | 41.6 |      |      |      |      |      | 3.1   | 1.6  |
| Level of Service                  |                                                                                    |      | D      |      | D    |      |      |      |      |      | A     | A    |
| Approach Delay (s)                |                                                                                    | 55.0 |        |      | 41.6 |      |      | 0.0  |      |      | 3.0   |      |
| Approach LOS                      |                                                                                    | D    |        |      | D    |      |      | A    |      |      | A     |      |
| <b>Intersection Summary</b>       |                                                                                    |      |        |      |      |      |      |      |      |      |       |      |
| HCM 2000 Control Delay            |                                                                                    |      | 10.7   |      |      |      |      |      |      |      |       |      |
| HCM 2000 Volume to Capacity ratio |                                                                                    |      | 0.53   |      |      |      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         |                                                                                    |      | 120.0  |      |      |      |      |      |      |      | 9.0   |      |
| Intersection Capacity Utilization |                                                                                    |      | 133.5% |      |      |      |      |      |      |      |       |      |
| Analysis Period (min)             |                                                                                    |      | 15     |      |      |      |      |      |      |      |       |      |
| c Critical Lane Group             |                                                                                    |      |        |      |      |      |      |      |      |      |       |      |

# HCM Unsignalized Intersection Capacity Analysis

145: US 29 (N)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 21                                                                                | 2826                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 21                                                                                | 2826                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 22                                                                                | 2944                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 918                                                                               | 277                                                                               |                                                                                   |
| pX, platoon unblocked             | 0.23                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1516                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.9                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.6                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 98                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 231                                                                               | 1084                                                                              | 1379                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 22                                                                                | 1472                                                                              | 1472                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 22                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1379                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.02                                                                              | 0.87                                                                              | 0.87                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.7                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 137.9%                                                                            |                                                                                   | ICU Level of Service                                                              |                                                                                   | H                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 146: US 29 (S) & Lewis and Clark U-Turn S

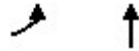
07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 187                                                                               | 1491                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 187                                                                               | 1491                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 203                                                                               | 1621                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   | 968                                                                               |                                                                                   |                                                                                   | 904                                                                               |
| pX, platoon unblocked             | 0.87                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1216                                                                              | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 942                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.4                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.3                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 87                                                                                |                                                                                   |
| cM capacity (veh/h)               | 197                                                                               | 1084                                                                              |                                                                                   |                                                                                   | 1545                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 203                                                                               | 810                                                                               | 810                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 203                                                                               | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1545                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.13                                                                              | 0.48                                                                              | 0.48                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 11                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.7                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 89.6%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | E                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

## Queues

### 147: US 29 (N) & Lewis and Clark U-Turn S

07/22/2021



| Lane Group              | EBL  | NBT   |
|-------------------------|------|-------|
| Lane Group Flow (vph)   | 203  | 2821  |
| v/c Ratio               | 0.87 | 1.08  |
| Control Delay           | 82.8 | 54.4  |
| Queue Delay             | 0.0  | 8.6   |
| Total Delay             | 82.8 | 63.0  |
| Queue Length 50th (ft)  | 150  | ~1300 |
| Queue Length 95th (ft)  | #279 | #1418 |
| Internal Link Dist (ft) | 29   | 889   |
| Turn Bay Length (ft)    |      |       |
| Base Capacity (vph)     | 245  | 2612  |
| Starvation Cap Reductn  | 0    | 0     |
| Spillback Cap Reductn   | 0    | 71    |
| Storage Cap Reductn     | 0    | 0     |
| Reduced v/c Ratio       | 0.83 | 1.11  |

#### Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 147: US 29 (N) & Lewis and Clark U-Turn S

07/22/2021



| Movement                          | EBL   | EBR  | NBL   | NBT   | SBT                       | SBR  |
|-----------------------------------|-------|------|-------|-------|---------------------------|------|
| Lane Configurations               |       |      |       |       |                           |      |
| Traffic Volume (vph)              | 187   | 0    | 0     | 2595  | 0                         | 0    |
| Future Volume (vph)               | 187   | 0    | 0     | 2595  | 0                         | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900  | 1900                      | 1900 |
| Total Lost time (s)               | 4.5   |      |       | 4.5   |                           |      |
| Lane Util. Factor                 | 1.00  |      |       | 0.95  |                           |      |
| Frt                               | 1.00  |      |       | 1.00  |                           |      |
| Flt Protected                     | 0.95  |      |       | 1.00  |                           |      |
| Satd. Flow (prot)                 | 1597  |      |       | 3343  |                           |      |
| Flt Permitted                     | 0.95  |      |       | 1.00  |                           |      |
| Satd. Flow (perm)                 | 1597  |      |       | 3343  |                           |      |
| Peak-hour factor, PHF             | 0.92  | 0.92 | 0.92  | 0.92  | 0.92                      | 0.92 |
| Adj. Flow (vph)                   | 203   | 0    | 0     | 2821  | 0                         | 0    |
| RTOR Reduction (vph)              | 6     | 0    | 0     | 0     | 0                         | 0    |
| Lane Group Flow (vph)             | 197   | 0    | 0     | 2821  | 0                         | 0    |
| Heavy Vehicles (%)                | 13%   | 0%   | 0%    | 8%    | 2%                        | 2%   |
| Turn Type                         | Prot  |      |       | NA    |                           |      |
| Protected Phases                  | 4     |      |       | 2     |                           |      |
| Permitted Phases                  |       |      |       |       |                           |      |
| Actuated Green, G (s)             | 17.2  |      |       | 93.8  |                           |      |
| Effective Green, g (s)            | 17.2  |      |       | 93.8  |                           |      |
| Actuated g/C Ratio                | 0.14  |      |       | 0.78  |                           |      |
| Clearance Time (s)                | 4.5   |      |       | 4.5   |                           |      |
| Vehicle Extension (s)             | 3.0   |      |       | 3.0   |                           |      |
| Lane Grp Cap (vph)                | 228   |      |       | 2613  |                           |      |
| v/s Ratio Prot                    | c0.12 |      |       | c0.84 |                           |      |
| v/s Ratio Perm                    |       |      |       |       |                           |      |
| v/c Ratio                         | 0.86  |      |       | 1.08  |                           |      |
| Uniform Delay, d1                 | 50.3  |      |       | 13.1  |                           |      |
| Progression Factor                | 1.10  |      |       | 0.74  |                           |      |
| Incremental Delay, d2             | 24.5  |      |       | 41.5  |                           |      |
| Delay (s)                         | 79.8  |      |       | 51.1  |                           |      |
| Level of Service                  | E     |      |       | D     |                           |      |
| Approach Delay (s)                | 79.8  |      |       | 51.1  | 0.0                       |      |
| Approach LOS                      | E     |      |       | D     | A                         |      |
| <b>Intersection Summary</b>       |       |      |       |       |                           |      |
| HCM 2000 Control Delay            |       |      | 53.0  |       | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio |       |      | 1.05  |       |                           |      |
| Actuated Cycle Length (s)         |       |      | 120.0 |       | Sum of lost time (s)      | 9.0  |
| Intersection Capacity Utilization |       |      | 94.5% |       | ICU Level of Service      | F    |
| Analysis Period (min)             |       |      | 15    |       |                           |      |
| c Critical Lane Group             |       |      |       |       |                           |      |

## Queues

### 150: US 29 (S) & U-Turn Access

07/22/2021



| Lane Group              | WBL  | SBT  |
|-------------------------|------|------|
| Lane Group Flow (vph)   | 23   | 1705 |
| v/c Ratio               | 0.19 | 0.53 |
| Control Delay           | 5.7  | 1.5  |
| Queue Delay             | 0.0  | 0.0  |
| Total Delay             | 5.7  | 1.5  |
| Queue Length 50th (ft)  | 0    | 91   |
| Queue Length 95th (ft)  | m0   | 104  |
| Internal Link Dist (ft) | 22   | 888  |
| Turn Bay Length (ft)    |      |      |
| Base Capacity (vph)     | 271  | 3219 |
| Starvation Cap Reductn  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    |
| Reduced v/c Ratio       | 0.08 | 0.53 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 150: US 29 (S) & U-Turn Access

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |
| Traffic Volume (vph)              | 21                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1586                                                                              |
| Future Volume (vph)               | 21                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1586                                                                              |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                               |
| Lane Util. Factor                 | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                              |
| Frt                               | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |
| Flt Protected                     | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |
| Satd. Flow (prot)                 | 1456                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3471                                                                              |
| Flt Permitted                     | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              |
| Satd. Flow (perm)                 | 1456                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3471                                                                              |
| Peak-hour factor, PHF             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Adj. Flow (vph)                   | 23                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1705                                                                              |
| RTOR Reduction (vph)              | 22                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Lane Group Flow (vph)             | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1705                                                                              |
| Heavy Vehicles (%)                | 24%                                                                               | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 4%                                                                                |
| Turn Type                         | Prot                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | NA                                                                                |
| Protected Phases                  | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Actuated Green, G (s)             | 3.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 107.7                                                                             |
| Effective Green, g (s)            | 3.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 107.7                                                                             |
| Actuated g/C Ratio                | 0.03                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.90                                                                              |
| Clearance Time (s)                | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4.5                                                                               |
| Vehicle Extension (s)             | 3.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                               |
| Lane Grp Cap (vph)                | 40                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3115                                                                              |
| v/s Ratio Prot                    | c0.00                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.49                                                                             |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| v/c Ratio                         | 0.02                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.55                                                                              |
| Uniform Delay, d1                 | 56.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.2                                                                               |
| Progression Factor                | 7.47                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.75                                                                              |
| Incremental Delay, d2             | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.6                                                                               |
| Delay (s)                         | 424.4                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1.6                                                                               |
| Level of Service                  | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |
| Approach Delay (s)                | 424.4                                                                             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 1.6                                                                               |
| Approach LOS                      | F                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 7.2                                                                               |                                                                                   | HCM 2000 Level of Service                                                         | A                                                                                 |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.53                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 120.0                                                                             |                                                                                   | Sum of lost time (s)                                                              | 9.0                                                                               |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 123.5%                                                                            |                                                                                   | ICU Level of Service                                                              | H                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

151: US 29 (N) & U-Turn Access

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 21                                                                                | 2625                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 21                                                                                | 2625                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 23                                                                                | 2823                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   | 522                                                                               | 969                                                                               |                                                                                   |
| pX, platoon unblocked             | 0.17                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1458                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.4                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 98                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 172                                                                               | 1091                                                                              | 1475                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | NB 4                                                                              |                                                                                   |                                                                                   |
| Volume Total                      | 12                                                                                | 12                                                                                | 1412                                                                              | 1412                                                                              |                                                                                   |                                                                                   |
| Volume Left                       | 12                                                                                | 12                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| cSH                               | 1475                                                                              | 1475                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.02                                                                              | 0.02                                                                              | 0.83                                                                              | 0.83                                                                              |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 1                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.5                                                                               | 7.5                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 123.5%                                                                            |                                                                                   | ICU Level of Service                                                              | H                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

160: Northside Dr E & US 29 (S)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 47                                                                                | 1535                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 47                                                                                | 1535                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 48                                                                                | 1582                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 518                                                                               |
| pX, platoon unblocked             | 0.90                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 887                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 641                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 97                                                                                |                                                                                   |
| cM capacity (veh/h)               | 358                                                                               | 1091                                                                              |                                                                                   |                                                                                   | 1636                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              | SB 4                                                                              |                                                                                   |                                                                                   |
| Volume Total                      | 24                                                                                | 24                                                                                | 791                                                                               | 791                                                                               |                                                                                   |                                                                                   |
| Volume Left                       | 24                                                                                | 24                                                                                | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.03                                                                              | 0.03                                                                              | 0.47                                                                              | 0.47                                                                              |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 2                                                                                 | 2                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.3                                                                               | 7.3                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 55.5%                                                                             |                                                                                   | ICU Level of Service                                                              | B                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

## Queues

### 161: US 29 (N) & Northside Dr E/North Pointe Access 1

07/22/2021



| Lane Group              | EBT  | WBR  | NBT  | NBR  |
|-------------------------|------|------|------|------|
| Lane Group Flow (vph)   | 48   | 131  | 2407 | 193  |
| v/c Ratio               | 0.16 | 0.52 | 0.82 | 0.14 |
| Control Delay           | 56.8 | 48.2 | 8.2  | 0.5  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 56.8 | 48.2 | 8.2  | 0.5  |
| Queue Length 50th (ft)  | 20   | 43   | 364  | 0    |
| Queue Length 95th (ft)  | m37  | 77   | 571  | 11   |
| Internal Link Dist (ft) | 14   |      | 174  |      |
| Turn Bay Length (ft)    |      |      |      | 300  |
| Base Capacity (vph)     | 541  | 437  | 2953 | 1391 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.09 | 0.30 | 0.82 | 0.14 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 161: US 29 (N) & Northside Dr E/North Pointe Access 1

07/22/2021

| Movement                          | EBL  | EBT  | EBR    | WBL  | WBT  | WBR   | NBL                       | NBT   | NBR   | SBL  | SBT  | SBR  |
|-----------------------------------|------|------|--------|------|------|-------|---------------------------|-------|-------|------|------|------|
| Lane Configurations               |      | ↕↕   |        |      |      | ↗↗    |                           | ↕↕    | ↗     |      |      |      |
| Traffic Volume (vph)              | 0    | 47   | 0      | 0    | 0    | 127   | 0                         | 2335  | 187   | 0    | 0    | 0    |
| Future Volume (vph)               | 0    | 47   | 0      | 0    | 0    | 127   | 0                         | 2335  | 187   | 0    | 0    | 0    |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900   | 1900 | 1900 | 1900  | 1900                      | 1900  | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)               |      | 4.5  |        |      |      | 4.5   |                           | 4.5   | 4.5   |      |      |      |
| Lane Util. Factor                 |      | 0.95 |        |      |      | 0.88  |                           | 0.95  | 1.00  |      |      |      |
| Frt                               |      | 1.00 |        |      |      | 0.85  |                           | 1.00  | 0.85  |      |      |      |
| Flt Protected                     |      | 1.00 |        |      |      | 1.00  |                           | 1.00  | 1.00  |      |      |      |
| Satd. Flow (prot)                 |      | 3610 |        |      |      | 2760  |                           | 3505  | 1615  |      |      |      |
| Flt Permitted                     |      | 1.00 |        |      |      | 1.00  |                           | 1.00  | 1.00  |      |      |      |
| Satd. Flow (perm)                 |      | 3610 |        |      |      | 2760  |                           | 3505  | 1615  |      |      |      |
| Peak-hour factor, PHF             | 0.97 | 0.97 | 0.97   | 0.97 | 0.97 | 0.97  | 0.97                      | 0.97  | 0.97  | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph)                   | 0    | 48   | 0      | 0    | 0    | 131   | 0                         | 2407  | 193   | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0    | 0    | 0      | 0    | 0    | 26    | 0                         | 0     | 30    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0    | 48   | 0      | 0    | 0    | 105   | 0                         | 2407  | 163   | 0    | 0    | 0    |
| Heavy Vehicles (%)                | 0%   | 0%   | 0%     | 0%   | 0%   | 3%    | 0%                        | 3%    | 0%    | 0%   | 0%   | 0%   |
| Turn Type                         |      | NA   |        |      |      | Perm  |                           | NA    | Perm  |      |      |      |
| Protected Phases                  |      | 4    |        |      |      |       |                           | 2     |       |      |      |      |
| Permitted Phases                  | 4    |      |        |      |      | 8     |                           |       | 2     |      |      |      |
| Actuated Green, G (s)             |      | 9.9  |        |      |      | 9.9   |                           | 101.1 | 101.1 |      |      |      |
| Effective Green, g (s)            |      | 9.9  |        |      |      | 9.9   |                           | 101.1 | 101.1 |      |      |      |
| Actuated g/C Ratio                |      | 0.08 |        |      |      | 0.08  |                           | 0.84  | 0.84  |      |      |      |
| Clearance Time (s)                |      | 4.5  |        |      |      | 4.5   |                           | 4.5   | 4.5   |      |      |      |
| Vehicle Extension (s)             |      | 3.0  |        |      |      | 3.0   |                           | 3.0   | 3.0   |      |      |      |
| Lane Grp Cap (vph)                |      | 297  |        |      |      | 227   |                           | 2952  | 1360  |      |      |      |
| v/s Ratio Prot                    |      | 0.01 |        |      |      |       |                           | c0.69 |       |      |      |      |
| v/s Ratio Perm                    |      |      |        |      |      | c0.04 |                           |       | 0.10  |      |      |      |
| v/c Ratio                         |      | 0.16 |        |      |      | 0.46  |                           | 0.82  | 0.12  |      |      |      |
| Uniform Delay, d1                 |      | 51.2 |        |      |      | 52.5  |                           | 4.8   | 1.7   |      |      |      |
| Progression Factor                |      | 1.12 |        |      |      | 1.00  |                           | 1.00  | 1.00  |      |      |      |
| Incremental Delay, d2             |      | 0.2  |        |      |      | 1.5   |                           | 2.6   | 0.2   |      |      |      |
| Delay (s)                         |      | 57.3 |        |      |      | 54.0  |                           | 7.4   | 1.8   |      |      |      |
| Level of Service                  |      | E    |        |      |      | D     |                           | A     | A     |      |      |      |
| Approach Delay (s)                |      | 57.3 |        |      | 54.0 |       |                           | 7.0   |       |      | 0.0  |      |
| Approach LOS                      |      | E    |        |      | D    |       |                           | A     |       |      | A    |      |
| <b>Intersection Summary</b>       |      |      |        |      |      |       |                           |       |       |      |      |      |
| HCM 2000 Control Delay            |      |      | 10.0   |      |      |       | HCM 2000 Level of Service |       | B     |      |      |      |
| HCM 2000 Volume to Capacity ratio |      |      | 0.78   |      |      |       |                           |       |       |      |      |      |
| Actuated Cycle Length (s)         |      |      | 120.0  |      |      |       | Sum of lost time (s)      |       | 9.0   |      |      |      |
| Intersection Capacity Utilization |      |      | 120.3% |      |      |       | ICU Level of Service      |       | H     |      |      |      |
| Analysis Period (min)             |      |      | 15     |      |      |       |                           |       |       |      |      |      |
| c Critical Lane Group             |      |      |        |      |      |       |                           |       |       |      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

162: US 29 (S) & Northside Dr W

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |                                                                                      |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 21                                                                                | 0                                                                                 | 6                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1530                                                                                                                                                                    | 5                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 21                                                                                | 0                                                                                 | 6                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1530                                                                                                                                                                    | 5                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                                                                                                    |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                                                                                                    | 0.97                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 22                                                                                | 0                                                                                 | 6                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1577                                                                                                                                                                    | 5                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                                                                                                         |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         | 769                                                                                 |
| pX, platoon unblocked             | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              |                                                                                   | 0.89                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC, conflicting volume            | 1580                                                                              | 1577                                                                              | 788                                                                               | 810                                                                               | 1582                                                                              | 0                                                                                 | 1582                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                       |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| vCu, unblocked vol                | 1413                                                                              | 1410                                                                              | 528                                                                               | 553                                                                               | 1415                                                                              | 0                                                                                 | 1415                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                       |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 7.7                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                                                                                                     |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.7                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                                                                                                     |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 94                                                                                | 100                                                                               | 95                                                                                | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 100                                                                                                                                                                     |                                                                                     |
| cM capacity (veh/h)               | 86                                                                                | 125                                                                               | 364                                                                               | 353                                                                               | 122                                                                               | 1091                                                                              | 436                                                                                 |                                                                                     |                                                                                     |                                                                                     | 1636                                                                                                                                                                    |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Total                      | 22                                                                                | 6                                                                                 | 788                                                                               | 788                                                                               | 5                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume Right                      | 22                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 5                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| cSH                               | 364                                                                               | 122                                                                               | 1700                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Volume to Capacity                | 0.06                                                                              | 0.05                                                                              | 0.46                                                                              | 0.46                                                                              | 0.00                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Queue Length 95th (ft)            | 5                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Control Delay (s)                 | 15.5                                                                              | 36.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Lane LOS                          | C                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay (s)                | 15.5                                                                              | 36.0                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                      | C                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 73.0%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

163: US 29 (N) & Northside Dr W

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 6                                                                                 | 2522                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 6                                                                                 | 2522                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 6                                                                                 | 2600                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 254                                                                               |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1312                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1312                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 152                                                                               | 1091                                                                              | 1636                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 6                                                                                 | 1300                                                                              | 1300                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 6                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.00                                                                              | 0.76                                                                              | 0.76                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 73.0%                                                                             | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 170: Airport Acres Rd (North) E & US 29 (S)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | WBL                                                                               | WBR                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 9                                                                                 | 1583                                                                              |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 9                                                                                 | 1583                                                                              |
| Sign Control                      | Stop                                                                              |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |
| Grade                             | 0%                                                                                |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 9                                                                                 | 1632                                                                              |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   | None                                                                              |                                                                                   |                                                                                   | None                                                                              |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 834                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 834                                                                               | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               |                                                                                   |                                                                                   | 99                                                                                |                                                                                   |
| cM capacity (veh/h)               | 309                                                                               | 1091                                                                              |                                                                                   |                                                                                   | 1636                                                                              |                                                                                   |
| Direction, Lane #                 | SB 1                                                                              | SB 2                                                                              | SB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 9                                                                                 | 816                                                                               | 816                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 9                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.48                                                                              | 0.48                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 80.4%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   | D                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

# HCM Unsignalized Intersection Capacity Analysis

## 171: Airport Acres Rd (North) E & US 29 (N)

07/22/2021



| Movement                          | EBL                                                                               | EBR  | NBL   | NBT                                                                               | SBT  | SBR  |
|-----------------------------------|-----------------------------------------------------------------------------------|------|-------|-----------------------------------------------------------------------------------|------|------|
| Lane Configurations               |  |      |       |  |      |      |
| Traffic Volume (veh/h)            | 9                                                                                 | 0    | 0     | 2545                                                                              | 0    | 0    |
| Future Volume (Veh/h)             | 9                                                                                 | 0    | 0     | 2545                                                                              | 0    | 0    |
| Sign Control                      | Stop                                                                              |      |       | Free                                                                              | Free |      |
| Grade                             | 0%                                                                                |      |       | 0%                                                                                | 0%   |      |
| Peak Hour Factor                  | 0.97                                                                              | 0.97 | 0.97  | 0.97                                                                              | 0.97 | 0.97 |
| Hourly flow rate (vph)            | 9                                                                                 | 0    | 0     | 2624                                                                              | 0    | 0    |
| Pedestrians                       |                                                                                   |      |       |                                                                                   |      |      |
| Lane Width (ft)                   |                                                                                   |      |       |                                                                                   |      |      |
| Walking Speed (ft/s)              |                                                                                   |      |       |                                                                                   |      |      |
| Percent Blockage                  |                                                                                   |      |       |                                                                                   |      |      |
| Right turn flare (veh)            |                                                                                   |      |       |                                                                                   |      |      |
| Median type                       |                                                                                   |      |       | None                                                                              | None |      |
| Median storage veh                |                                                                                   |      |       |                                                                                   |      |      |
| Upstream signal (ft)              |                                                                                   |      |       |                                                                                   |      |      |
| pX, platoon unblocked             |                                                                                   |      |       |                                                                                   |      |      |
| vC, conflicting volume            | 1312                                                                              | 0    | 0     |                                                                                   |      |      |
| vC1, stage 1 conf vol             |                                                                                   |      |       |                                                                                   |      |      |
| vC2, stage 2 conf vol             |                                                                                   |      |       |                                                                                   |      |      |
| vCu, unblocked vol                | 1312                                                                              | 0    | 0     |                                                                                   |      |      |
| tC, single (s)                    | 6.8                                                                               | 6.9  | 4.1   |                                                                                   |      |      |
| tC, 2 stage (s)                   |                                                                                   |      |       |                                                                                   |      |      |
| tF (s)                            | 3.5                                                                               | 3.3  | 2.2   |                                                                                   |      |      |
| p0 queue free %                   | 94                                                                                | 100  | 100   |                                                                                   |      |      |
| cM capacity (veh/h)               | 150                                                                               | 1091 | 1636  |                                                                                   |      |      |
| Direction, Lane #                 | EB 1                                                                              | NB 1 | NB 2  |                                                                                   |      |      |
| Volume Total                      | 9                                                                                 | 1312 | 1312  |                                                                                   |      |      |
| Volume Left                       | 9                                                                                 | 0    | 0     |                                                                                   |      |      |
| Volume Right                      | 0                                                                                 | 0    | 0     |                                                                                   |      |      |
| cSH                               | 150                                                                               | 1700 | 1700  |                                                                                   |      |      |
| Volume to Capacity                | 0.06                                                                              | 0.77 | 0.77  |                                                                                   |      |      |
| Queue Length 95th (ft)            | 5                                                                                 | 0    | 0     |                                                                                   |      |      |
| Control Delay (s)                 | 30.5                                                                              | 0.0  | 0.0   |                                                                                   |      |      |
| Lane LOS                          | D                                                                                 |      |       |                                                                                   |      |      |
| Approach Delay (s)                | 30.5                                                                              | 0.0  |       |                                                                                   |      |      |
| Approach LOS                      | D                                                                                 |      |       |                                                                                   |      |      |
| Intersection Summary              |                                                                                   |      |       |                                                                                   |      |      |
| Average Delay                     |                                                                                   |      | 0.1   |                                                                                   |      |      |
| Intersection Capacity Utilization |                                                                                   |      | 80.4% | ICU Level of Service                                                              |      | D    |
| Analysis Period (min)             |                                                                                   |      | 15    |                                                                                   |      |      |

# HCM Unsignalized Intersection Capacity Analysis

172: US 29 (S) & Airport Acres Rd (North) W

07/22/2021

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |                                                                                         |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                        | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | <br> |                                                                                     |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 9                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1578                                                                                                                                                                       | 5                                                                                   |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 9                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1578                                                                                                                                                                       | 5                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                     |                                                                                     | Free                                                                                |                                                                                     | Free                                                                                                                                                                       |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     | 0%                                                                                                                                                                         |                                                                                     |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                                                                                                       | 0.97                                                                                |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 9                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1627                                                                                                                                                                       | 5                                                                                   |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                                                                                                            |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| vC, conflicting volume            | 1634                                                                              | 1630                                                                              | 816                                                                               | 818                                                                               | 1632                                                                              | 0                                                                                 | 1632                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                          |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| vCu, unblocked vol                | 1634                                                                              | 1630                                                                              | 816                                                                               | 818                                                                               | 1632                                                                              | 0                                                                                 | 1632                                                                                |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                          |                                                                                     |
| tC, single (s)                    | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 7.5                                                                               | 6.5                                                                               | 6.9                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                                                                                                        |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                                                                                                        |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 98                                                                                | 100                                                                               | 91                                                                                | 100                                                                               | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 100                                                                                                                                                                        |                                                                                     |
| cM capacity (veh/h)               | 64                                                                                | 103                                                                               | 324                                                                               | 267                                                                               | 102                                                                               | 1091                                                                              | 403                                                                                 |                                                                                     |                                                                                     |                                                                                     | 1636                                                                                                                                                                       |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume Total                      | 5                                                                                 | 9                                                                                 | 1085                                                                              | 547                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume Left                       | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume Right                      | 5                                                                                 | 0                                                                                 | 0                                                                                 | 5                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| cSH                               | 324                                                                               | 102                                                                               | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Volume to Capacity                | 0.02                                                                              | 0.09                                                                              | 0.64                                                                              | 0.32                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Queue Length 95th (ft)            | 1                                                                                 | 7                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Control Delay (s)                 | 16.3                                                                              | 43.5                                                                              | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Lane LOS                          | C                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Approach Delay (s)                | 16.3                                                                              | 43.5                                                                              | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Approach LOS                      | C                                                                                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 125.6%                                                                            | ICU Level of Service                                                              |                                                                                   |                                                                                   | H                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

173: US 29 (N)

07/22/2021

|                                   |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |  |  |                                                                                   |                                                                                   |
| Traffic Volume (veh/h)            | 0                                                                                 | 0                                                                                 | 9                                                                                 | 2545                                                                              | 0                                                                                 | 0                                                                                 |
| Future Volume (Veh/h)             | 0                                                                                 | 0                                                                                 | 9                                                                                 | 2545                                                                              | 0                                                                                 | 0                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |
| Hourly flow rate (vph)            | 0                                                                                 | 0                                                                                 | 9                                                                                 | 2624                                                                              | 0                                                                                 | 0                                                                                 |
| Pedestrians                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Width (ft)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Walking Speed (ft/s)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Percent Blockage                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 1330                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 1330                                                                              | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.8                                                                               | 6.9                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 99                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 148                                                                               | 1091                                                                              | 1636                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 9                                                                                 | 1312                                                                              | 1312                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 9                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 1636                                                                              | 1700                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.01                                                                              | 0.77                                                                              | 0.77                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (ft)            | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 7.2                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   | 127.5%                                                                            |                                                                                   | ICU Level of Service                                                              |                                                                                   | H                                                                                 |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

**REQUEST FOR PROPOSAL:**  
Strategic Plan for the Charlottesville-Albemarle  
Metropolitan Planning Organization

**PURPOSE OF WORK:**

The Charlottesville-Albemarle Metropolitan Planning Organization (CA-MPO), housed and staffed by the Thomas Jefferson Planning District Commission (TJPDC), seeks the services of an experienced consultant to develop a strategic plan for the CA-MPO. The consultant will work with staff and a stakeholder committee, if designated, to review and assess the CA-MPO organizational structure, policies, and practices and develop strategies to implement proposed recommendations to support the established purpose and goals of the MPO. The strategic plan should be completed by June 30, 2022.

**PROCESS AND DEADLINES:**

Submission:

- Proposal submissions should be sent via email to: Sandy Shackelford at [sshackelford@tjpdcc.org](mailto:sshackelford@tjpdcc.org)
- Phone: (434) 422-4823
- *Note:* The TJPDC reserves the right to reject any or all proposals wherever it is in the best interest of the Planning District Commission. The TJPDC is an Equal Opportunity Employer. Minority and Women-owned businesses are encouraged to submit a proposal.
- Proposals will be received until October 22, 2021 at 4:00 pm.  
Late Proposals: Proposals received after the stated closing time and date will not be considered.

Decision:

- Proposals will be reviewed within 10 business days of the closing date and notification of decision will be made by November 5, 2021.

Proposals must Include the following:

- Cover letter introducing the consultant team;
- Qualifications to include a brief history of the consultant's business and services, consultant team members and relevant experience, and the identification and contact information for the primary point of contact;

- A minimum of three (3) references from clients for whom you have completed similar work products in the past, including the time period services were provided. Please provide a summary of the work performed and client contact information;
- Cost Estimate not to exceed \$30,000;
- A work plan that specifically addresses all elements in the Scope of Work described below including a project schedule of required and recommended tasks and milestones.

Period of Performance:

- The time period for the work described in the scope is approximately 7 months from issuance of Notice to Proceed.

**BACKGROUND:**

The CA-MPO is the forum for cooperative transportation decision-making among Charlottesville, Albemarle, state and federal officials. The MPO considers long-range regional projects and combines public input, technical data, and agency collaboration to develop forward-thinking solutions.

Organized for the City of Charlottesville and the urbanized area of Albemarle County immediately surrounding the City, the CA-MPO is responsible for carrying out continuing, cooperative and comprehensive transportation planning and programming processes. The MPO coordinates the transportation planning activities of the various transportation-related agencies that have both a direct and indirect impact on the Long Range Plan and Transportation Improvement Program.

The CA-MPO has an annual budget of approximately \$320,000 and does not have any staff exclusively dedicated to its operation, although there are staff that work predominately within the program.

In May of 2016, CA-MPO staff developed its first three-year strategic plan. Many of the opportunities identified in this initial strategic plan have been implemented. But there has been significant staff transition since that plan was developed, and there are several items that have remained unaddressed. CA-MPO staff has been working to develop better systems to identify regional priorities to incorporate into the development of its annual work program, but the development of the annual work program generally lacks continuity from one year to the next without a more robust understanding of transportation planning goals and priorities.

The CA-MPO is governed by the Policy Board and currently meets on a bi-monthly basis. In addition to the Technical Committee, the CA-MPO also maintains an ongoing Citizens Technical Advisory Committee. In 2017, the Regional Transit Partnership (RTP) was established as an advisory board to provide recommendations to decision-makers on transit-related matters.

While funding for the RTP is a regular item in the CA-MPO's Unified Planning Work Program, the RTP is not formally imbedded within the CA-MPO's committee structure.

### **SCOPE OF WORK:**

The successful consultant should have experience working with governmental bodies and understand federal requirements governing metropolitan planning organizations as well as state funding resources for transportation planning and projects.

The Strategic Plan should cover a three-to-five year time frame, engage the key MPO stakeholders in its development, and should address the following:

- Development of a Vision and Mission statement;
- Review of Policy Board and Committee by-laws and policies;
- Clarification of MPO stakeholders and clients;
- Evaluation of committee structure, membership, meeting regularity, and purpose;
- Integration/coordination with other related programs such as rural transportation, transit, and commuter assistance;
- Annual work plan development priorities and processes;
- Effective citizen engagement, public participation, and process communication;
- Coordination with stakeholders; and
- Recommendation of implementation strategies, schedules, and progress evaluation.

The development of the Strategic Plan should be completed with a high level of engagement with the CA-MPO Policy Board, CA-MPO committee members, other regional stakeholders, and CA-MPO staff. The proposed Scope of Work should include the consultant's approach to incorporate this input into the final work product.

### **DELIVERABLES:**

1. Facilitated discussions with staff, members of the Policy Board and other MPO committee members, and other regional stakeholders;
2. Digital copies of all materials used to facilitate discussions;
3. Written and presented summary of findings report;
4. Final strategic plan detailing Mission, Vision, Goals, Strategies, Timeline, Organizational Structure, and any other recommendations developed as part of the strategic planning process, including specific implementation guidelines.
5. Two presentations of findings and recommendations to MPO Committees and Policy Board, to include a presentation of the draft, and a presentation of the final incorporating appropriate feedback.

**EVALUATION CRITERIA:**

Each proposal will be evaluated based upon the following published criteria, including compliance with the RFP instruction and the mandatory terms and conditions set forth within the RFP document. The objective of the evaluation will be to select the consultants who, in the sole discretion of the TJPDC, offers the best value and fit for the needs of the CA-MPO. Each proposal will be evaluated on the following criteria:

1. Project Understanding: The proposal demonstrates that the consultants understand the needs and priorities of the CA-MPO.
2. Approach and Methodology: The proposal demonstrates that the consultant team has a well-developed plan to satisfy all items in the Scope of Work.
3. Experience and Qualifications: The members of the consultant team and any sub-contractors possess the necessary skills and experience to successfully complete the Scope of Work.
4. References: The consultant team is able to demonstrate that it has successfully completed similar projects for previous clients.
5. Cost: The proposal includes reasonable details of cost estimates broken out by project task and deliverables.