

MEMORANDUM

TO: ROB ORLANDO

FROM: BILL WUENSCH, P.E., PTOE

ORGANIZATION: PEABODY SCHOOL

DATE: MAY 21, 2018  
Revised July 16, 2018

PHONE NUMBER:

SENDER'S REFERENCE NUMBER:

Re: SCHOOL SUP AMENDMENT – ONSITE TRAFFIC  
AND CIRCULATION ANALYSIS

YOUR REFERENCE NUMBER:

URGENT     FOR YOUR USE     PLEASE COMMENT     PLEASE REPLY     PLEASE RECYCLE

## Introduction

The Peabody School, a private K-8 school founded in 1994, is interested in expanding its facilities to accommodate an increase in enrollment of 30 students. Currently, the school serves 210 students from 150 families. The purpose of this report is to provide a traffic analysis for the projected effects of the increase in enrollment proposed for the school's entrance and parking requirements.

Traffic observations were conducted on the afternoon of Thursday, May 10, 2018, and the morning of Monday, May 14, 2018. Parking observations were conducted at two hour intervals throughout the day of Friday, May 11, 2018. All onsite queuing was measured from the applicable entrance to the Peabody School building.

## Existing Conditions

Figure 1 displays the study area, and the study intersection locations.

### *Morning Observations*

Upon arriving, the kids quickly exited their vehicles, allowing traffic to keep flowing. A steady stream of drop offs began at 8:00am. Queuing (measured from the front door) was generally minor, in the 0-3 car range, and one brief outlier, at 8 cars. Arrivals began to dissipate at around 8:23am, and dropped sharply after 8:30am. Throughout the drop off time, a few parents used the northern parking lot to walk their children into the school. At no time did queuing spill back onto Stony Ridge Road.

For offsite queuing at Stony Ridge Road and Southern Parkway, queuing was minimal with typically just one car approaching and turning, and an occasional maximum of three vehicles briefly in queue.

### *Afternoon Observations*

The school day begins at 8:25am, and ends at 3:00pm. Parents start arriving to pick up their kids around 2:30pm. Pickups occur in pulses as follows:

1. Beginning at 2:55pm, approximately 20 vehicles utilized the back parking lot (loop lot parallel to Southern Parkway) on the south side of the school. The elementary kids were escorted to each waiting car. This operation was contained entirely within the loop lot.
2. At 3:00pm cars began lining up across the front of the school (i.e. parallel to Stony Ridge Road). Pickup locations are arranged into 5 signed spots. The elementary kids were escorted individually to each car. The typical maximum queue beyond the five pickup spots was approximately two to three vehicles. At no time did queuing extend back to near the site entrance from Stony Ridge Road.
3. At 3:20pm the middle school kids began to leave. The cars lined up across the front of the school again. The students were called out of the school as their parents arrived. This pulse is the quickest, as the middle school students do not have to be individually escorted to the waiting cars. The typical maximum queue beyond the five pickup spots was approximately two to three vehicles. At no time did queuing extend back to near the site entrance from Stony Ridge Road.

The 3:00 and 3:20 pick up operations were generally a continuous flow of traffic with little queuing beyond the five signed pickup spots.

By 3:25pm the parents had almost all arrived and picked up their kids. By 3:30pm there were a few, sporadic arrivals. At no time did the vehicles waiting in queue for the pickup operation spill back to Stony Ridge Road, or were even very close to spilling back that distance. **Figure 2 shows the spatial layout of the pulses.** Overall, the operation appeared to be well orchestrated and very organized.

Relative to offsite queuing to enter onto Southern Parkway from Stony Ridge Road, queuing was minimal as there was very little opposing traffic.

*Note that as described in the trip generation section of this memorandum, the anticipated change in trips entering the school in the morning is 20 vehicles and in the afternoon 14 vehicles. This is approximately one vehicle per 1.5 minutes in the morning and 1 vehicle every two minutes in the afternoon. Based on observations of the existing drop off and pick up operations, it is projected that this additional traffic will have minimal impacts on queuing.*



Figure 1. Location Map

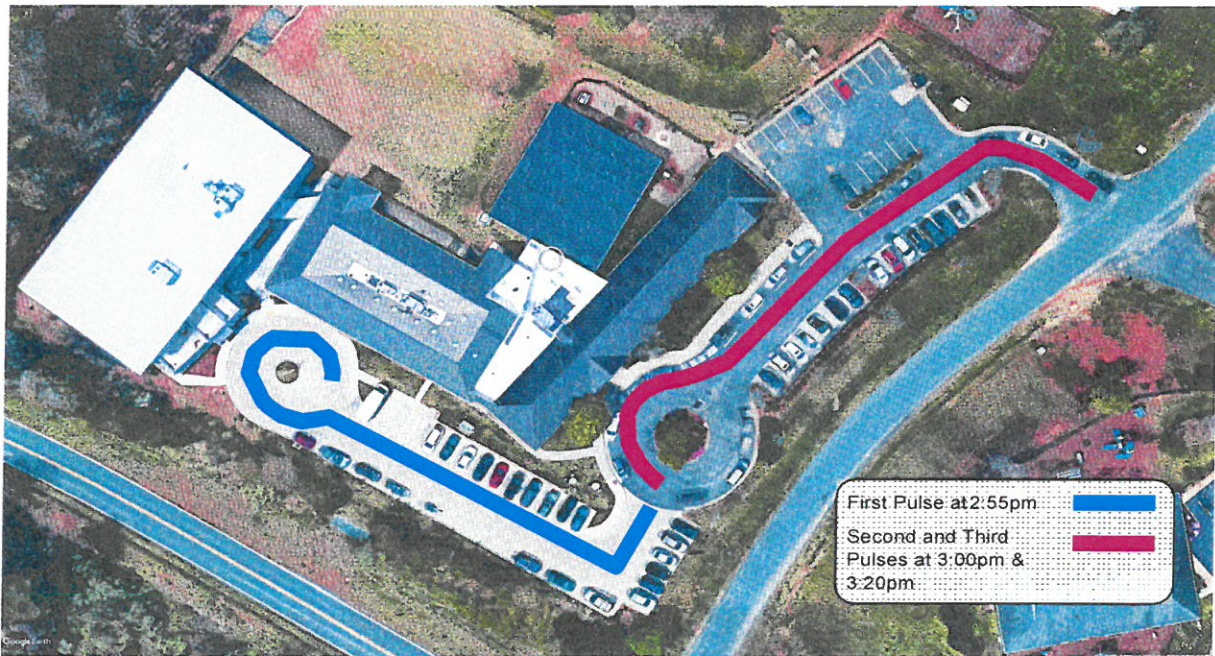


Figure 2. Pulse Staging

Observations of the parking lot usage were conducted every two hours beginning at 9:00 AM, and ending with the 3:00 PM observations on Friday, May 11, 2018. Table 1 summarizes the findings of the parking observations. Since May 11, 2018 consisted of a field trip and noon dismissal, the parking data should consider the changes in parking counts between 1:00 PM

and 3:00 PM as typically occurring after 3:00 PM, with the addition of 1-2 “filled” parking spaces for additional staff that comes to the School for the roughly 20 to 30 students that stay for after-school activities on a normal day.

Only two staff chaperones went to the field trip using their own vehicles, which typically would be parked at the school. Thus two additional cars would likely be in the “filled” section of the second column. In addition, as stated earlier, two more additional cars would likely also be in the “filled” section for the intervals beginning at 1:00 p.m. and 3:00 p.m., accounting for the 1-2 staff members that come to the School for the roughly 20 to 30 students that stay for the after-school activities.

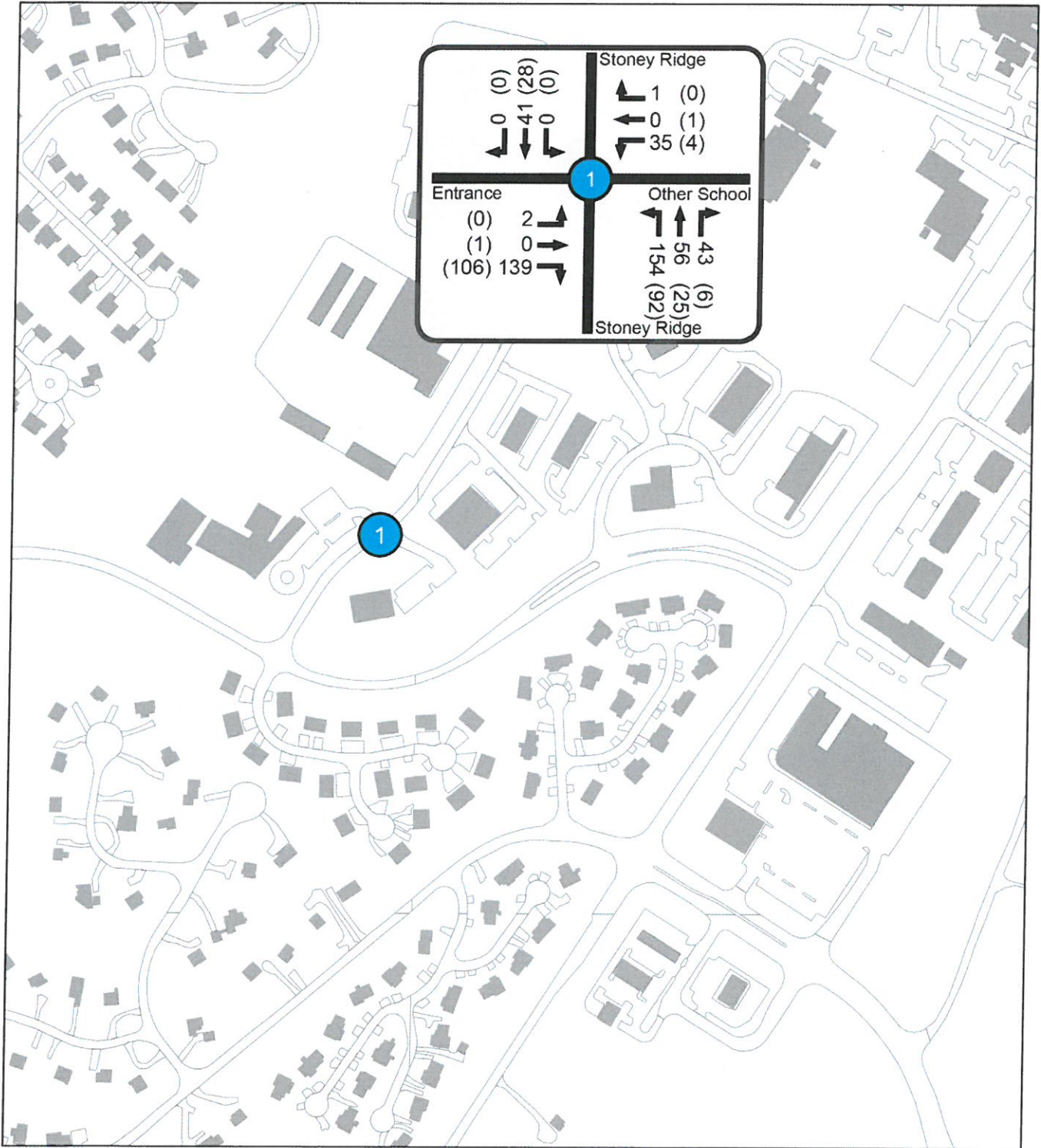
Observation Time	Filled/Total Spaces	Cars in Unmarked Spots
9:00am	28/58	0
11:00am	26/58	0
1:00pm	26/58	1
3:00pm	17/58	2

Table 1. Parking Summary

*Based on our observations, it appears that there is sufficient parking on the school site and the approximately 15% increase in enrollment, with minimal staff level increases, is not expected to cause a condition where there is a deficit in parking capacity for normal school operations.*

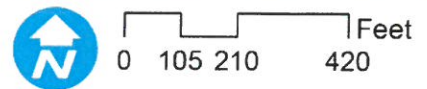
A peak hour volume count was conducted for the study intersection from 2:45pm to 3:45 on Thursday, May 10, 2018 and from 7:45am to 8:45am on Monday, May 14, 2018 to observe the existing traffic volumes during peak AM and PM hours on two typical weekdays. Figure 3 shows the results of the volume count observations.

Peabody School Addition Traffic Assessment | Existing Traffic Volumes



Legend

- Study Intersection
- XX (XX) AM (PM) Peak Hour



EPRPC

Figure 3. Existing Traffic Volumes

As mentioned in the introduction section, the school intends to increase its enrollment by 30 students, taking it from 210 students to 240 students. Two methods were used to project the impact of increased enrollment on the traffic requirements for the school. The first method compares the current and future data by using the ITE trip generation analysis. The second method applies a proportional increase based on existing volumes.

*Method 1*

A site trip generation analysis was conducted using 240 students to compare with the above trip generation analysis, which used 210 students. Table 2 repeats the above analysis, while Table 3 shows the results of the increased enrollment to 240 students.

Land Use	Land Use Code	AM In	AM Out	PM In	PM Out
Private School (K-8)	534	112	88	61	69

Table 2. Site Trip Generation Table – 210 Students

Land Use	Land Use Code	AM In	AM Out	PM In	PM Out
Private School (K-8)	534	127	99	70	79

Table 3. Site Trip Generation Table - 240 Students

The ITE method indicates a difference of 15 cars entering and 11 cars exiting in the morning, and 9 entering and 10 cars existing in the afternoon.

*Method 2*

Method 2 entailed estimating the increase in volume with the additional 30 students by proportionally increasing the numbers based on the actual counts made during the observations. Tables 4 & 5 show the comparison between the current volume and estimated projections.

AM In	AM Out	PM In	PM Out
154	139	92	106

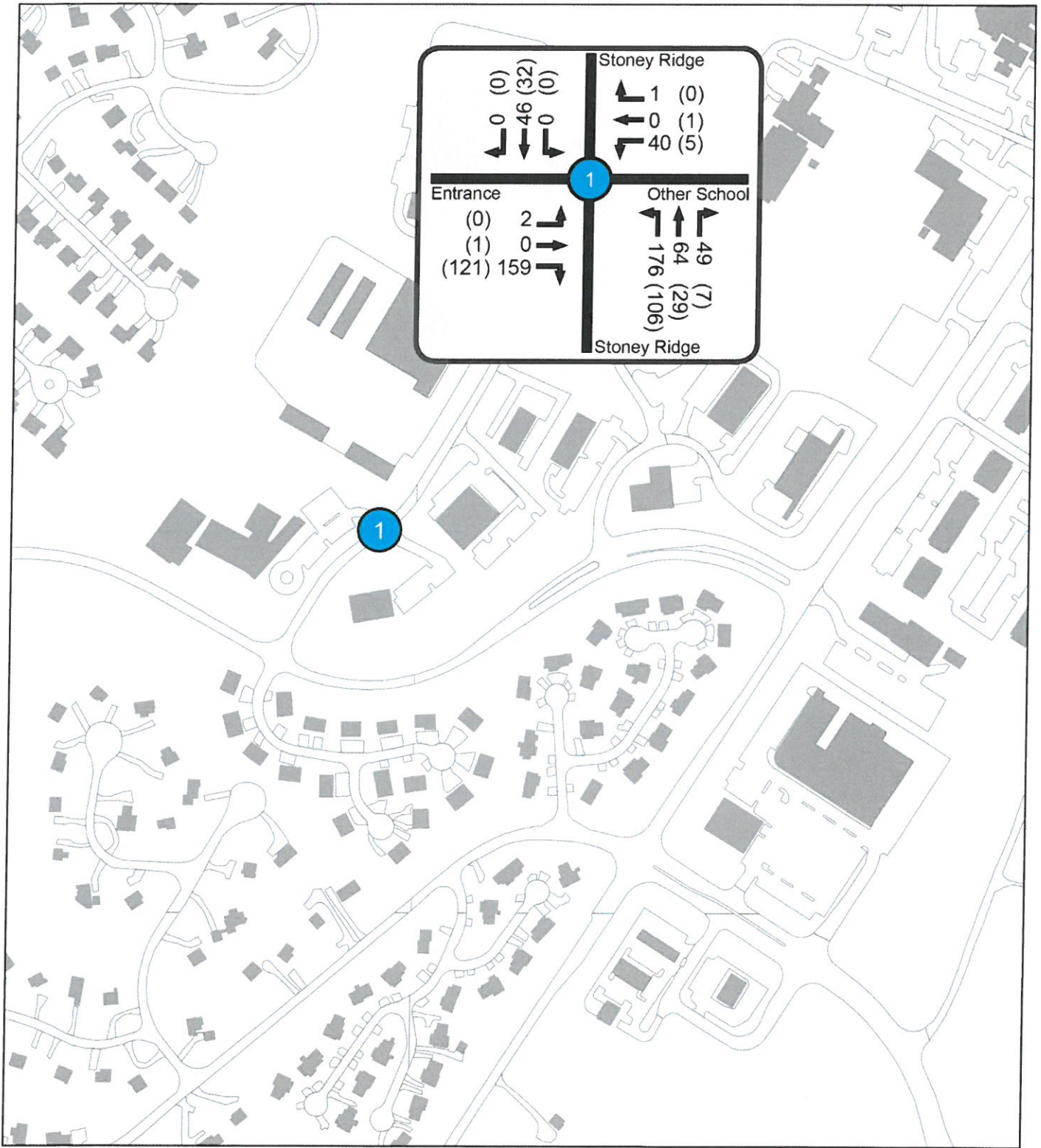
Table 4. Actual Vehicle Counts Entering and Leaving the School

AM In	AM Out	PM In	PM Out
176	159	106	121


Table 5. Extrapolated Counts with 30 more Students

Method 2 indicates a difference of 22 cars entering and 20 cars exiting in the morning, and 14 cars entering and 15 cars exiting in the afternoon.

Peabody School Addition Traffic Assessment | Projected Traffic Volumes



Legend

-  Study Intersection
- XX (XX) AM (PM) Peak Hour

EPRPC

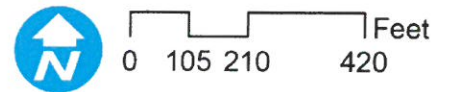


Figure 4. Extrapolated Counts with 30 more Students