

MEMORANDUM

TO: ASHLEY DAVIES

FROM: BILL WUENSCH, P.E., PTOE

ORGANIZATION: WILLIAMS MULLENS

DATE: NOVEMBER 21, 2016

PHONE NUMBER:

SENDER'S REFERENCE NUMBER:

Re: TRAFFIC CONDITIONS UPDATE MEMO

YOUR REFERENCE NUMBER:

☐ URGENT☒ FOR YOUR USE☐ PLEASE COMMENT☐ PLEASE REPLY☐ PLEASE RECYCLE**Regents School Traffic Conditions Summary**

The purpose of this memorandum is to summarize current site access traffic conditions per field observations and a recent entrance traffic count. This is being provided as a comparison to prior traffic conditions per the 2014 traffic study and approval by the County for the school to expand enrollment. At that time, the school made a commitment to change the site entrance to restrict egress to right-out only, and also provide a van shuttle to the school to help decrease the overall site trip generation.

At present, the enrollment at this location is 108 students with a typical staff count of 11 full time and 5 part time employees.

Traffic observations were conducted on the afternoon of Tuesday November 1st, and the morning of Wednesday November 2nd, 2016.

A summary of observation are as follows:**Afternoon of November 1st, 2016 (2:30 to 3:30PM)**

- At 2:45 a vehicle make a left out the site but it was not associated with the school.
- Traffic was heaviest between 2:45 and 3:15PM
- At 3:15 the queue at the Broomley Road Signal for the westbound approach backed up past the school entrance.
- School traffic was 51 vehicles into the site and 52 vehicles out of the site, thus 103 trips total. In the peak 15 minute period there was total of 56 trips into and out of the site.
- In the prior study the count did not include the 2:30 to 2:45 period. Thus from 2:45 to 3:30 there are 89 trips to/from the site. By comparison for the same 45 minute period in the recent count the total was 95 trips to/from the site. This means that there are

currently 6 more trips in the 45 minute peak period. However, in the peak 15 minute period the 2014 PM count had 34 trips as compared to the current count of 56 total trips, for a difference of 22 trips (sum of entering and existing). Interpreting this difference, over a 15 minute period in the current count there was one more car entering or leaving every 40 seconds than in the previous count. The current PM count summary is shown below.

Total vehicle traffic

Interval starts	NorthBound			Eastbound			Southbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14:30	0	0	0	1	0	0	0	0	0	0	0	7	8
14:45	0	0	0	4	0	0	0	0	2	0	0	21	27
15:00	0	0	0	4	0	0	0	0	40	0	0	12	56
15:15	0	0	0	0	0	0	0	0	10	0	0	2	12

- Overall, as observed there was never more than 2 cars in the eastbound left turn queue entering the site. Generally there was only one vehicle in queue as it waited a short time to make the turn into the site. There was no queue for the right turns entering the site.
- The egress right turn movement moved with little delay, usually only one car though on a couple occasions there were as many as three cars in queue. Average delay appeared to be very low.
- Per observations, there were no "close calls" between the ingress left turn and westbound through movements. There appeared to be sufficient gaps to make this movement.
- There were no occasions of school related traffic making the prohibited left turn out of the site.

Morning of November 2nd, 2016 (7:30 to 8:30AM)

- The shuttle van dropped off at 7:44. There were numerous students dropped off by the van.
- At 8:10 the eastbound through movement began to queue up to past the school entrance. This is due to the through volume traffic exceeding the through movement capacity at the downstream signal ().
- Comparing the 2014 study counts, there were 83 total trips (ingress and egress) versus 103 total trips in the current count. The difference of 20 trips over the hour mean that there is one more car currently every three minutes on average. In the peak 15 minute period the prior count was 53 total trips and the current count is 49 total trips, very similar results.

A summary of the traffic counts is as shown below:

Total vehicle traffic

Interval starts	NorthBound			Eastbound			Southbound			Westbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30	0	0	0	7	0	0	0	0	0	0	0	3	10
07:45	0	0	0	8	1	0	0	0	22	0	0	18	49
08:00	0	0	0	2	0	0	0	0	20	0	0	17	39
08:15	0	0	0	1	0	0	0	0	3	0	0	1	5

- Per the observations, there were no violations of the left turn prohibition at the intersection.
- Delays of for all vehicles, entering and exiting, was minimal. For the egress queueing there was generally only one car in queue though on a couple occasions there were as many as two cars in the queue.

Crash Analysis

As part of the investigation, EPR assembled crash data per the VDOT crash database information. Data from 9/2011 thru 6/2016 was summarized and examined. The primary crash pattern in the study area was rear end crashes. The rear end crashes are likely the result of queueing as a result of the traffic signals to the east and west of the school entrance. There were no angle crashes at the school entrance. There were no crashes reported that appear to be attributable to the Regents entrance. The crash diagram is attached to this memorandum.

Other Information:

- The shuttle van was said to pick up at the Walmart on Route 29.
- Vehicle leaving the site are forced per the turn restriction to go west on Route 250. It is unknown where they go to turn around. Per discussion with Ms. Palumbo, it is thought that these vehicles use alternate routes to access I-64, Earlysville, or perhaps turn around at the All Saints Anglican Church, approximately 1.5 miles to the west, with whom Regents has an agreement to accommodate this traffic.

END OF MEMORANDUM

Attachments:
Crash Diagram

Regents School Update-Crash Summary (08/01/2011-07/31/2016)

#	Crash #	Date	Type	Time	#	Crash #	Date	Type	Time
1	143495464	12/15/2014	Rear End	530pm	18	133300050	7/19/2013	Rear End	417pm
2	160205099	1/19/2016	Rear End	958am	19	112730033	9/9/2011	Rear End	133pm
3	161665307	6/14/2016	Rear End	330pm	20	122710014	8/27/2012	Rear End	825am
4	132985224	10/25/2013	Backed Into	236pm	21	143525397	12/18/2014	Rear End	521pm
5	132795009	10/6/2013	Fixed Object-Off Road	900pm	22	132180155	4/17/2013	Rear End	828am
6	122150179	7/1/2012	Angle	1007am	23	153645153	12/29/2015	Ped	709am
7	121630107	5/22/2012	Rear End	807am	24	121880023	6/11/2012	Rear End	1200pm
8	141075118	4/17/2014	Rear End	850am	25	153035190	10/26/2015	Angle	337pm
9	141675055	6/16/2014	Angle	1138pm	26	161685245	6/16/2016	Angle	240pm
10	140865307	3/27/2014	Rear End	502pm	27	153605245	12/26/2015	Rear End	747pm
11	133225293	11/18/2013	Rear End	956am	28	1528115310	10/8/2015	Rear End	441pm
12	162125208	7/30/2016	Rear End	530pm	29	132900003	6/17/2013	Rear End	359pm
13	122210122	7/2/2012	Rear End	943am	30	152205062	8/8/2015	Rear End	636am
14	141305047	5/10/2014	Non-Collision	500am	31	141845160	7/3/2014	Rear End	951am
15	122900019	8/29/2012	Sideswipe-Opposite Direction	816am	32	121640245	5/25/2012	Rear End	149pm
16	141075125	4/17/2014	Rear End	850am	33	120940003	3/5/2012	Rear End	413pm
17	113400137	11/11/2011	Deer	547pm	34	130500167	12/12/2012	Rear End	455pm

