

Traffic Control Signals Review – Birchmount Road and Merryfield Drive

Date: April 10, 2017
To: Scarborough Community Council
From: Director, Transportation Services, Scarborough District
Wards: Ward 37 – Scarborough Centre

SUMMARY

This report recommends that traffic control signals not be approved at the intersection of Birchmount Road and Merryfield Drive. The assessment concludes that based on current peak vehicular and pedestrian volumes and delays and conflicts at this intersection, traffic control signals are neither justified nor warranted at this time.

RECOMMENDATIONS

The Director, Transportation Services, Scarborough District recommends that:

1. City Council not authorize the installation of traffic control signals at the intersection of Birchmount Road and Merryfield Drive.

FINANCIAL IMPACT

There is no financial impact associated with this report. However, should City Council approve the installation of traffic control signals, the cost would be approximately \$180,000.00. Funding for such traffic control signals has not been included in the Transportation Services 2017 Capital Budget.

DECISION HISTORY

This report addresses a new initiative.

COMMENTS

As a result of a request from Councillor Michael Thompson, Transportation Services staff conducted a pedestrian crossing protection review at the intersection of Birchmount Road and Merryfield Drive. The field study was conducted on Wednesday, April 15, 2015. The pedestrian crossover study covered an area of approximately 100 metres in length along Birchmount Road: 50 metres either side of the intersection with Merryfield Drive.

The following characteristics describe the intersection of Birchmount Road and Merryfield Drive:

- This intersection is located on Birchmount Road, approximately 500 metres north of Lawrence Avenue East.
- Birchmount Road is a four-lane major arterial roadway with a posted speed limit of 60 kilometres per hour and a daily traffic volume of approximately 19,800 vehicles per day.
- The land uses on this roadway is a mix of single family residential homes, industrial and commercial properties.
- There are sidewalks along both sides of Birchmount Road.
- There are Pedestrian Ahead Warning signs posted on Birchmount Road in advance of the subject intersection for both directions.

Pedestrian Crossing Protection Warrant Studies

Transportation Services staff conducted a Pedestrian Crossing Protection Warrant Study at this intersection. The study provides an assessment of the need for traffic control signals or a pedestrian crossover based on crossing pedestrian volumes and delays, which are expressed in terms of percent compliance with accepted thresholds. The 100% threshold is approximately 200 pedestrian crossings in an eight-hour period.

Traffic Control Signal Justification Study

Using traffic volumes recorded over the peak eight hours of a typical weekday the following results were obtained.

Traffic Control Signal Warrant	Compliance Level - Wednesday, April 15, 2015
Minimum Vehicular Volume	17%
Delay To Cross Traffic	29%
Collision Hazard	0%

For traffic control signals to be numerically justified, one of the "Minimum Vehicular Volume" or "Delay to Cross Traffic" or Collision Hazard" warrants must be 100% satisfied, or both "Minimum Vehicle Volume" and "Delay to Cross Traffic" must be at least 80% satisfied. Our review of the Collision Hazard at the time was based on the most recent five-year (2010 - 2014) collision history available.

As outlined in the above tables, the traffic volumes do not satisfy the warrants to install traffic control signals.

Pedestrian Crossover Warrant Study

The following Pedestrian Crossover Warrant Study results were obtained.

Pedestrian Crossover Warrant	Compliance Level - Wednesday, April 15, 2015
Pedestrian Volume	39%
Pedestrian Delays	38%

For a pedestrian crossover to be numerically justified, both the "Pedestrian Volume" and "Pedestrian Delays" warrants must be 100% satisfied.

As outlined in the above table, the pedestrian volumes and delays do not satisfy the requirements to install a pedestrian crossover at the subject intersection at this time.

For a pedestrian crossover to be numerically justified, the required "Pedestrian Volume" must exceed 200 pedestrians crossing Birchmount Road in the peak eight-hour period in this case. There were only 79 pedestrians observed crossing during the study period.

In addition, the 85th percentile traffic speed of 66 km/h along Birchmount Road exceeds the guideline of 60 km/h or less for which a pedestrian crossover is considered safe to use. If a crossover had been warranted, staff would have instead recommended the installation of Traffic Control Signals in light of the speed issue, notwithstanding the results of the warrant analysis.

Collision History

An updated review of the available Toronto Police Service collision records for the five-year period ending December 31, 2015 are summarised below:

Five-Year Collision	2011	2012	2013	2014	2015	Total
Vehicle-Only Collisions potentially Preventable by Traffic Control Signals	0	0	0	0	0	0
Collisions involving Pedestrian Crossings of Birchmount Road (at the subject intersection)	0	0	0	0	0	0

As shown in the above table, this collision record is not indicative of a safety problem at this location.

On the basis of the foregoing studies and analyses, it is recommended that Traffic Control Signals not be installed at the intersection of Birchmount Road and Merryfield Drive at this time. However, should such signals be justified in the future, this would be a suitable location from a traffic signal spacing and operations perspective. The nearest traffic control signal are at Laura Secord Walk located to the north and at Lawrence Avenue East located to the south.

It should be noted that a Pedestrian Refuge Island ("PRI") would not be feasible at this location as the road is not wide enough, the operation speeds may be too fast, such an island could create a hazardous deflection in the alignment of the through traffic lanes, and the PRI warrant guideline was not met (79 pedestrians vs a minimum guideline of 100 pedestrians).

In addition, staff can be requested to update the study once the three year moratorium has expired in May of 2018. The TTC has been consulted regarding this matter and concurs with the staff conclusions and recommendations regarding Traffic Control Signals and a Pedestrian Crossover. The TTC has also suggested that a Pedestrian Refuge Island be considered at this location. However, as indicated above, such an island is neither warranted nor technically feasible at this location.

CONTACT

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SIGNATURE

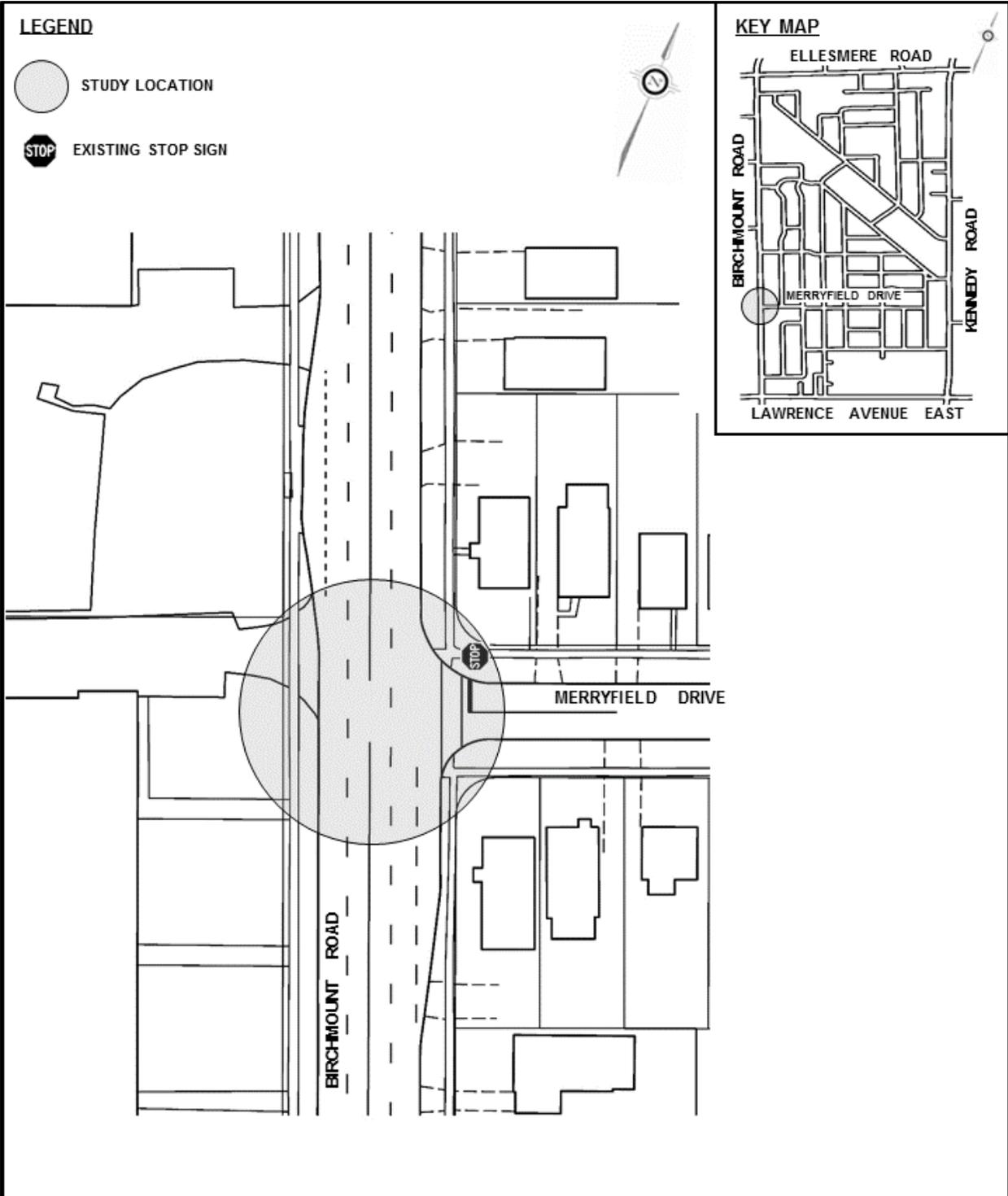
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D17-8136894

ATTACHMENTS

1. Location Plan (Traffic Control Signals Review - Birchmount Road and Merryfield Drive)



 TORONTO TRANSPORTATION SERVICES		TRAFFIC OPERATIONS Scarborough District	
SCALE:	Not to Scale	TRAFFIC CONTROL SIGNAL REVIEW BIRCHMOUNT ROAD AND MERRYFIELD DRIVE	
DATE:	March 2017		
DRAFTING:	OK/FL		
		FILE NUMBER: D17-8136894	
		ATTACHMENT 1	WARD 37