

Traffic Control Signal Review - Birchmount Road and Merryfield Drive

Date: February 24, 2020
To: Scarborough Community Council
From: Acting Director, Traffic Management, Transportation Services
Wards: Ward 21 – Scarborough Centre

SUMMARY

As the Toronto Transit Commission (TTC) operates transit service on Birchmount Road, City Council approval of this report is required.

This report recommends that City Council authorize the installation of traffic control signals (TCS) at the intersection of Birchmount Road at Merryfield Drive. Currently, as Birchmount Road is designated as a through highway, this intersection has a stop control facing the westbound approach on Birchmount Road at Merryfield Drive.

Although, the technical warrants for the installation of Traffic Control Signals are not met, installation of Traffic Control Signals is recommended due to other relevant factors/operating conditions.

RECOMMENDATIONS

The Acting Director, Traffic Management, Transportation Services recommends that:

1. City Council authorize the installation of traffic control signals at the intersection of Birchmount Road and Merryfield Drive.

FINANCIAL IMPACT

The estimated cost of installing TCS at Birchmount Road and Merryfield Drive is approximately \$250,000. This installation will be considered in 2021, subject to availability of funding and competing priorities.

DECISION HISTORY

This report addresses a new initiative.

COMMENTS

In response to a request from Councillor Michael Thompson and a local resident, Transportation Services staff reviewed the feasibility of installing TCS or a Pedestrian Crossover (PXO) on Birchmount Road and Merryfield Drive.

Existing Conditions

The following characteristics describe Birchmount Road and Merryfield Drive:

- This is a T-intersection located north of Lawrence Avenue East, south of Ellesmere Road, and west of Kennedy Road, which has a commercial driveway slightly offset on the west side that would be included within the TCS.
- Birchmount Road is a four-lane major arterial road. The regulatory speed limit was recently reduced from 60 km/h to 50 km/h, under Vision Zero 2.0 - Road Safety Plan (Item IE6.8) and is signed in the field.
- Merryfield Drive is a two-lane local road with a regulatory speed limit of 50 km/h unsigned.
- Currently, as the subject section of Birchmount Road is designated as a through highway, westbound traffic on Merryfield Drive is required to stop at Birchmount Road.
- Adjacent TCS are located on Birchmount Road approximately 500 metres to the south at Lawrence Avenue East and on Birchmount Road approximately 450 metres to the north at Laura Secord Walk. The distance between the existing signalized crossings is approximately 950 metres.
- High operating vehicle speeds (85th percentile speed of 74 km/h) were observed before the regulatory speed limit was recently reduced from 60 km/h to 50 km/h.
- Sidewalks are located on all sides of this intersection.

- The TTC operates the "17 Birchmount" bus service on Birchmount Road, and there are northbound and southbound TTC bus stops near the intersection.
- The land use in this area is a mix of residential, industrial, commercial, recreational and a place of worship.

Analysis

Traffic Control Signal Justification Study

Using traffic volumes recorded during the peak eight hours on Thursday, April 4, 2019, the following results were obtained:

Traffic Control Signal Warrant	Compliance Level
Minimum Vehicular Volume	13%
Delay To Cross Traffic	21%
Collision Hazard	7%

This study has been evaluated using the updated warrant calculations as adopted by City Council on July 16, 17 and 18, 2019 in the Vision Zero 2.0 Road Safety Plan report (Item IE6.8). The results of our study indicated that the technical warrants for the installation of a TCS are not met.

In order to meet the warrant for TCS, one of the "Minimum Vehicular Volume" or "Delay to Cross Traffic" or "Collision Hazard" warrants must be 100% satisfied, or both the "Minimum Vehicular Volume" and "Delay to Cross Traffic" warrants must be at least 80% satisfied. Our review of the Collision Hazard is based on the previous three-year (2016 – 2018) collision history available.

In addition to the numerical justification for TCS, other factors relevant to the TCS warrant were also considered. The assessment included consideration of operating traffic speeds and volumes, a commercial driveway on the west side of the intersection, presence of transit stops (bus bays), sight lines, and the distance between existing signalized crossings.

Although the numerical requirements of the TCS warrant are not met, based on an assessment of relevant factors and by applying engineering judgement, Transportation Services staff recommend the installation of TCS at the intersection of Birchmount Road and Merryfield Drive.

Pedestrian Crossing Protection Study

Using traffic volumes recorded during the peak eight hours on Thursday, April 4, 2019, the following results were obtained:

Pedestrian Crossing Protection	Compliance Level
Pedestrian Volumes	22%
Pedestrian Delays	22%

For a PXO to be numerically justified, both the "Pedestrian Volume" and "Pedestrian Delays" warrants must be 100 percent satisfied.

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

This study has been evaluated using the updated warrant calculations as adopted by City Council on July 16, 2019 in the Vision Zero 2.0 Road Safety Plan report (Item IE6.8).

Collision History

An updated review of the available Toronto Police Service collision records for the three-year period ending December 31, 2018 is summarised below:

Three-Year Collision Information	Number of Reported Collisions (By Year)			
	2016	2017	2018	Total
Collisions Potentially Preventable by the Installation of Traffic Control Signals	0	1	0	1
Collisions Involving Pedestrians Crossing Danforth Road	0	1	0	1

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SIGNATURE

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D19-9423344
D19-9660755

ATTACHMENTS

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

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