

Traffic Control Signals Review - Lawrence Avenue East and Valparaiso Avenue

Date: December 3, 2019
To: Scarborough Community Council
From: Acting Director, Traffic Management, Transportation Services
Wards: Ward 21 – Scarborough Centre

SUMMARY

As the Toronto Transit Commission (TTC) operates a transit service on Lawrence Avenue East, City Council approval of this report is required.

Further to a request from a private citizen, Transportation Services staff reviewed the feasibility of installing traffic control signals on Lawrence Avenue East at Valparaiso Avenue.

This report recommends that traffic control signals be installed at the intersection of Lawrence Avenue East and Valparaiso Avenue as the existing conditions meet the technical warrant for the installation of pedestrian crossing protection.

Currently, this location is controlled by a stop sign for southbound traffic on Valparaiso Avenue. The results of our study indicate that a total of 219 pedestrians were recorded crossing Lawrence Avenue East, of which 210 pedestrians experienced delays over 10 seconds.

RECOMMENDATIONS

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

1. City Council authorize the installation of traffic control signals at the intersection of Lawrence Avenue East and Valparaiso Avenue.

FINANCIAL IMPACT

The financial impact of installation of traffic control signals are approximately \$200,000. Funding for such traffic control signals is available within the Transportation Services 2020 Interim Operating Budget.

DECISION HISTORY

This report addresses a new initiative.

COMMENTS

Existing Conditions

The following characteristics describe Lawrence Avenue East and Valparaiso Avenue:

- This intersection is located west of McCowan Road and south of Ellesmere Road.
- Lawrence Avenue East is a seven-lane major arterial road with a regulatory speed limit of 60 km/h. Valparaiso Avenue is a two-lane local road with a regulatory speed limit of 50 km/h.
- Currently, southbound traffic on Valparaiso Avenue is required to stop at Lawrence Avenue East.
- Sidewalks are located on both sides of Lawrence Avenue East and Valparaiso Avenue.
- Toronto Transit Commission (TTC) operates bus service on Lawrence Avenue East.
- The land use in the surrounding area consists mainly of single family residential dwellings, industrial businesses and Hospital.
- Adjacent traffic control signals are located at approximately 108 metres east at McCowan Road and 400 metres west at Barrymore Road.

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	14%
Delay To Cross Traffic	56%
Collision Hazard	13%

In order to meet the warrant for Traffic Control Signals, 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 period ending December 31, 2018.

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 Warrant

PXO Warrant	Required Volume	Recorded Volume	Compliance Level
Pedestrian Volumes	200	219	100%
Pedestrian Delays	130	210	100%

Based on eight-hour vehicular volume of 19,471

For a pedestrian crossover (PXO) to be numerically justified, both the "Pedestrian Volume" and "Pedestrian Delays" warrants must be 100% satisfied. For a PXO to be numerically justified at this intersection, the required "Pedestrian Volume" must exceed 200 pedestrians crossing Lawrence Avenue East during the peak eight-hour period

As outlined in the above table, the pedestrian volumes and delays do satisfy the technical requirements to install a PXO. However, a PXO on Lawrence Avenue East would not be suitable given the failure of the suitability criteria on this major arterial road. As an alternative, installing traffic control signals at this location would provide a safe and convenient access for pedestrians crossing Lawrence Avenue East.

A PXO is not environmentally suitable for this section of Lawrence Avenue East given the operating speed. A recent speed study along Lawrence Avenue East revealed an operating speed (85th percentile speed) of 70 kmh. PXO's should not be considered on roadways having an operating speed equal or greater than 60 kmh. However, the provision of traffic control signals at Valparaiso Avenue would provide a safe and convenient access for pedestrians crossing Lawrence Avenue East.

The majority of pedestrians crossing at this location are to access Scarborough General Hospital located directly opposite Valparaiso Avenue on the north side of Lawrence Avenue. Most of these crossings are either visitors, health care workers or patients going to and from the hospital.

Collision History

An updated review of the available Toronto Police Service collision records for the three-year period ending December 31, 2018 are 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	1	1	0	2
Collisions Involving Pedestrians Crossing Lawrence Avenue East	*1	0	0	1

*As outlined in the above tables, there was one fatal accident during 2016 at mid-block approximately 50 metres west of Valparaiso Avenue on Lawrence Avenue East.

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SIGNATURE

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ATTACHMENTS

1. Attachment 1: Location Plan (Traffic Control Signals Review - Lawrence Avenue East and Valparaiso Avenue).

Attachment 1 - Location Plan (Traffic Control Signals Review - Lawrence Avenue East and Valparaíso)

