

Traffic Control Signal Study – McLevin Avenue and Hupfield Trail

Date:	March 29, 2011
To:	Scarborough Community Council
From:	Director, Transportation Services, Scarborough District
Wards:	Ward 42 – Scarborough-Rouge River
Reference Number:	P:\2011\Cluster B\TRA\Scarborough\sc1148 D11-4176079 McLevin Hupfield tcs

SUMMARY

The purpose of this report is to obtain approval for the installation of Traffic Control Signals at the intersection of McLevin Avenue and Hupfield Trail.

Traffic studies reveal that a pedestrian crossover is warranted at this location, but this control device would be too close to the Traffic Control Signals located at McLevin Avenue and Neilson Road. The best traffic safety alternative is to upgrade to traffic control signals.

RECOMMENDATIONS

Transportation Services recommends that:

1. City Council approve the installation of Traffic Control Signals at the intersection of McLevin Avenue and Hupfield Trail.
2. City Council pass or amend the appropriate by-law(s) accordingly.

Financial Impact

The financial cost of installing these new traffic control signals would be approximately \$175,000.00. The funding for these signals is available in the Transportation Services Division's Capital Works Budget under Project No. CTP711-01.

ISSUE BACKGROUND

Further to a request from Mary Shadd Public School personnel, Transportation Services staff conducted traffic studies to determine whether traffic control signals should be installed at the subject intersection.

Traffic Control Signal and Pedestrian Crossover studies have been conducted at the intersections of McLevin Avenue and Hupfield Trail, and McLevin Avenue and Pennyhill Drive.

COMMENTS

The following characteristics describe the intersection of McLevin Avenue and Hupfield Trail:

- McLevin Avenue is a four-lane minor arterial road. Hupfield Trail is a collector road. This intersection is in the Malvern Neighbourhood.
- McLevin Avenue has a posted speed limit of 50 kilometres per hour (km/h) and a daily traffic volume of approximately 13,000 vehicles per day (vpd).
- Mary Shadd Public School and Sacred Heart Separate School are located 500 metres north on Hupfield Trail and Malvern Public Library is located approximately 400 metres due south of Hupfield Trail and McLevin Avenue.
- This intersection is presently controlled by a southbound stop sign on Hupfield Trail.
- Toronto Transit Commission bus stops for both the eastbound and westbound directions along McLevin Avenue are located in direct proximity to the intersection. The Toronto Transit Commission has been consulted with the potential conversion of Hupfield Trail and McLevin Avenue to traffic control signals.
- Traffic Control Signals are located approximately 174 metres west at Neilson Road and approximately 480 metres east at McLevin Avenue/Sewells Road.
- McLevin Avenue is not sufficiently wide to warrant the installation of a pedestrian refuge island at Hupfield Trail.
- Sidewalks are located on both sides of McLevin Avenue and Hupfield Trail.

Traffic Control Signal Warrant Study

Transportation Services staff conducted a Traffic Control Signal Warrant Study at the intersection of McLevin Avenue and Hupfield Trail. Using traffic volumes recorded over the peak eight hours of a typical weekday, the following warrant compliance results were obtained.

Traffic Control Signal Warrant	McLevin Avenue and Pennyhill Drive April 21, 2010	McLevin Avenue and Hupfield Trail April 21, 2010
Minimum Vehicular Volume	35%	51%
Delay To Cross Traffic	40%	73%
Collision Hazard	7%	7%

For traffic control signals to be numerically justified, one of the “Minimum Vehicular Volume”, “Delay to Cross Traffic” or "Collision Hazard" warrants must be 100 percent satisfied, or the first two warrants must be at least 80 percent satisfied. Our review of the Collision Hazard is based on the previous three-year (2007 to 2009) collision history.

As outlined in the above tables, neither the traffic volume nor the collision history satisfies the numeric requirements to install traffic control signals at those intersections.

Pedestrian Crossover Warrant Study

In addition a Pedestrian Crossover (PXO) Warrant Study was also conducted, and the following warrant compliance results were obtained.

PXO Warrant	McLevin Avenue and Pennyhill Drive April 21, 2010	McLevin Avenue and Hupfield Trail April 21, 2010
Warrant 1: Pedestrian Volume	53%	100%
Warrant 2: Pedestrian Delay	67%	100%

To support the installation of a pedestrian crossover, both warrants must be satisfied to the extent of 100 percent. In order for the pedestrian delay warrant to be met, a minimum of 200 pedestrians must be observed crossing the roadway, of which 130 must be delayed for periods greater than 10 seconds when crossing McLevin Avenue. Given these observations, a pedestrian crossover is warranted at this time at McLevin Avenue and Hupfield Trail, but would be too close to the Traffic Control Signals at Neilson Road and McLevin Avenue located 174 metres west of this location.

Collision History

A review of the Toronto Police Service collision records for the three-year period from January 1, 2007 to December 31, 2009 is summarised below.

Three-Year Collision Information	Number of Reported Collisions			
	2007	2008	2009	Total
Collisions Potentially Preventable by the installation of Traffic Control Signals	0	0	1	1
Collisions Involving Pedestrians Crossing McLevin Avenue	0	0	0	0

As show above, the reported collision records on the above noted roadway is not indicative of a pedestrian safety problem at this time.

In summary, even though traffic control signal warrants are not numerically met at the intersection of McLevin Avenue and Hupfield Trail, the warrants for a Pedestrian Crossover are met. Unfortunately, the proximity of traffic control signals at Neilson Road and McLevin Avenue precludes the installation of a PXO. In order to provide the necessary pedestrian crossing protection, traffic control signals should be installed at the subject intersection as an upgrade from a PXO.

CONTACT

Marko A. Oinonen, P.Eng.
Manager, Traffic Operations, Scarborough District
Tel: 416-396-7148
Fax: 416-396-5641
E-Mail: moinone@toronto.ca

SIGNATURE

Peter J. Noehammer, P.Eng.
Director, Transportation Services, Scarborough District

PW:ca

ATTACHMENTS

1. Location Plan (Proposed Traffic Control Signals – McLevin Avenue and Hupfield Trail)