



**STAFF REPORT
ACTION REQUIRED**

Pedestrian Crossing Protection Study – McLevin Avenue and Malvern Street

Date:	August 12, 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\sc1187 D11- 4398443 McLevin Malvern - traffic signals/pxo

SUMMARY

Traffic studies reveal that all warrants for pedestrian crossing protection, specifically, traffic control signals, pedestrian crossover or a pedestrian refuge island are not warranted at this location at this time. As a result, pedestrian crossing protection should not be installed since it is not warranted, and neither a pedestrian cross over nor island are feasible.

RECOMMENDATIONS

Transportation Services recommends that:

1. City Council not approve the installation of Traffic Control Signals at the intersection of McLevin Avenue and Malvern Street at this time.
2. City Council not pass or amend the appropriate by-law(s) accordingly.

Financial Impact

There is no financial impact associated with this report; however, should City Council approve installation of Traffic Control Signals, the estimated cost would be approximately \$150,000.00.

ISSUE BACKGROUND

Further to a request from Councillor Raymond Cho for a report to Scarborough Community Council and City Council, Transportation Services staff reviewed the feasibility of installing a Traffic Control Signal (TCS), a Pedestrian Crossover (PXO), or a Pedestrian Refuge Island (PRI) at McLevin Avenue and Malvern Street at this location.

COMMENTS

The following characteristics describe the intersection of McLevin Avenue and Malvern Street:

- McLevin Avenue is a four-lane minor arterial roadway and Malvern Street is a two lane collector road.
- A northbound stop sign on Malvern Street presently controls northbound traffic at this three-way intersection.
- McLevin Avenue has a speed limit of 50 kilometres per hour (km/h), a daily traffic volume of approximately 11,500 vehicles per day, and an operating speed of approximately 61 km/h.
- Toronto Transit Commission bus stops for both the eastbound and westbound directions are located on McLevin Avenue on the west side of the intersection.
- Traffic Control Signals are located approximately 310 metres west at Markham Road and McLevin Avenue. Approximately eighty-six percent of all pedestrian crossings were patrons of the TTC.
- Land uses on this section of McLevin Avenue is a mix of industrial/commercial along the north side and residential along the south side.
- Sidewalks are located on both sides of McLevin Avenue and Malvern Street.

Traffic Control Signal Justification

Transportation Services staff conducted a Traffic Control Signal Justification Study at the intersection of McLevin Ave and Malvern Street. Using traffic volumes recorded over the peak eight hours of a typical weekday (Thursday, April 14, 2011) the following results were obtained:

Justification	Compliance
1. Minimum Vehicular Volume	57%
2. Delay to Cross Traffic	78%
3. Collision Hazard	27%

For the traffic control signals to be numerically justified, the following results need to be obtained:

1. One of the "Minimum Vehicular Volume", "Delay to Cross Traffic" or "Collision Hazard" justifications must be 100 per cent satisfied, or
2. The first two justifications must be at least 80 per cent satisfied.

Collision History

Five-year review period for which we have complete data: January 1, 2001 to December 31, 2005

Five-Year Collision Information	Number of Reported Collisions					
	2006	2007	2008	2009	2010	Total
Collisions Potentially Preventable by the Installation of Traffic Control Signals	1*	2	1	3	0	7*
Collisions Involving Pedestrians Crossing McLevin Avenue	1*	0	0	0	0	1*

*Includes a pedestrian collision that was also traffic control signal preventable.

As outlined in the table, these values failed to justify traffic control signals at this intersection at this time. In addition, TCS might encourage traffic infiltration along Malvern Street.

Pedestrian Crossover Warrant Study

Transportation Services staff also conducted a Pedestrian Crossover Warrant Study at the subject intersection. Using pedestrian volumes recorded over the peak eight hours of a typical weekday (Thursday, April 14, 2011), the following results were obtained:

Pedestrian Crossover Warrant	Compliance Level
Pedestrian Volume	17%
Pedestrian Delays	35%

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, both warrants have not been satisfied. Furthermore, a review of the design standards, or "environmental standards" for pedestrian crossovers, which prescribe a roadway environment and exposure factors suitable for this type of control, revealed that a pedestrian crossover would not be a suitable form of pedestrian crossing protection at this location. This is due primarily to the operating speeds (average of eastbound and westbound, 85th percentile speed of 61 km/h) on McLevin Avenue. In addition stopped buses potentially block motorist sightlines to pedestrians due to the proximity of the Toronto Transit Commission bus stops at this intersection; therefore, a PXO is not feasible at this location.

Pedestrian Refuge Island Warrant Study

As an alternative, staff reviewed the feasibility of installing a Pedestrian Refuge Island (PRI); however, the warrant was not met as 46 pedestrian crossings were recorded, and a minimum of 100 pedestrian crossings are required. In addition, McLevin Avenue is not wide enough (13 metres) to accommodate a PRI, since the minimum required width is 16.4 metres. A PRI is not feasible at this location.

In summary, studies indicate that there are insufficient pedestrian crossing volumes to justify the installation of pedestrian crossing protection, and insufficient vehicle volumes to justify the installation of Traffic Control Signals at this location.

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SIGNATURE

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ATTACHMENTS

1. Location Plan (Pedestrian Crossing Protection Study - McLevin Avenue at Malvern Street)