

TORONTO STAFF REPORT

August 13, 2004

To: Toronto and East York Community Council

From: Director, Transportation Services South District

Subject: Jarvis Street, between Dundas Street East and Gerrard Street East – Installation of Pedestrian Traffic Control Signals
(Toronto Centre-Rosedale, Ward 27)

Purpose:

The purpose of this report is to outline the findings of an investigation regarding the feasibility of installing Pedestrian Traffic Control Signals (PTCS) on Jarvis Street, between Dundas Street East and Gerrard Street East.

Financial Implications:

There is no cost or financial implication associated with the receipt of this report.

Recommendation:

It is recommended that this report be received for information.

Comments:

At the request of Councillor Kyle Rae, Transportation Services is reporting to Toronto and East York Community Council on the results of an investigation into the feasibility and need for installing Pedestrian Traffic Control Signals (PTCS) on Jarvis Street, between Dundas Street East and Gerrard Street East to enhance pedestrian safety.

Jarvis Street, between Dundas Street East and Gerrard Street East is a five-lane major arterial road with an average weekday traffic volume over 35,000 vehicles. There are two northbound and two southbound traffic lanes delineated on Jarvis Street with a fifth (centre) reversible lane, operating predominantly southbound except for the period from 3:30 p.m. to 6:30 p.m., Monday to Friday, when this lane operates northbound to accommodate peak directional traffic flow. The pavement width of Jarvis Street, between Dundas Street East and Gerrard Street East is approximately 15.2 metres and the maximum speed limit is 50 kilometres per hour. The distance between Dundas Street East and Gerrard Street East is approximately 390 metres and traffic control signals (TCS) are located on Jarvis Street at both intersections. Properties along Jarvis

Street are varied in character, ranging from commercial/retail to institutional (Ryerson University)/residential. Parking is allowed on the west side of Jarvis Street, controlled by Pay-&-Display machines, and prohibited at all times on the east side of the street. Stopping prohibitions apply during the morning and afternoon rush hour periods, Monday to Friday, on both sides of the street.

A review of the Toronto Police Services' collision data records for a three-year period ending in September 2003 indicated that 42 midblock incidents have been reported on Jarvis Street, between Dundas Street East and Gerrard Street East. The majority of incidents involved vehicles turning to/from driveways colliding with vehicles travelling on Jarvis Street. One incident involved a pedestrian (deemed to be intoxicated at the time), crossing from west to east, who sustained minor injuries after stepping into the path of a northbound vehicle.

Staff has undertaken a statistical review of traffic and pedestrian activity along Jarvis Street, between Dundas Street East and Gerrard Street East. A pedestrian crossing and delay survey undertaken in this area recorded the following:

- (1) Approximately 300 pedestrians crossed Jarvis Street, between Dundas Street East and Gerrard Street East during the peak eight hours of the day;
- (2) Approximately 150 pedestrians were delayed in excess of 10 seconds before being able to cross the street; and
- (3) More than 16,000 vehicles were recorded travelling on Jarvis Street during the same peak eight-hour period of the day.

The foregoing statistical data indicates that the installation of some form of pedestrian crossing control in this block is numerically justified. The two most obvious measures are the installation of a Pedestrian Crossover (PXO) or Pedestrian Traffic Control Signal. Although the number of pedestrians and delays initially suggests the installation of a pedestrian crossover, the environmental conditions along Jarvis Street are such that the installation of a PXO is not advisable for the following reasons:

- (1) Jarvis Street has a five-lane cross-section, which presents operational safety concerns;
- (2) Traffic volume is over 35,000 vehicles a day (on a typical weekday);
- (3) The 85th percentile speed (operational speed) of traffic is approximately 60 kilometres per hour;
- (4) Several driveways intersect both sides of Jarvis Street, which contribute to a moderate turning volume to/from Jarvis Street; and
- (5) Regardless of where a PXO were situated, there would be less than 215 metres between adjacent crossing controls.

Since the installation of a PXO on Jarvis Street, between Dundas Street East and Gerrard Street East is not advisable, the investigation was expanded to consider installation of Pedestrian Traffic Control Signals.

The following tables plot the findings of our pedestrian study on Jarvis Street against the installation warrants for PTCS. Specifically, Warrant 5, of the signal justification warrants is used to determine the need for such signals.

Pedestrian Volume Justification (Warrant 5A)

8 Hour Vehicular Traffic Volume	Net 8 Hour Pedestrian Volume				
	<200	200 - 275	276 – 475	476 - 1000	>1000
< 1440					
1440 – 2600				NA	100%
2601 – 7000			NA	100%	100%
> 7000		NA	100%	100%	100%

Pedestrian Delay Justification (Warrant 5B)

Net 8 Hour Volume of Pedestrians	Net Total 8 Hour Volume of Delayed Pedestrians		
	<75	75 - 130	>130
<200			
200 – 300		NA	100%
>300		100%	100%

The “hatched” areas indicate levels where the installation of PTCS is not justified. In order to satisfy the installation guidelines, both parts “A” and “B” of Warrant 5 should be 100 per cent satisfied. Based on this evaluation, the section of Jarvis Street, between Dundas Street East and Gerrard Street East satisfies the technical warrant for the installation of midblock traffic control signals.

Notwithstanding, from an operational safety perspective, Pedestrian Traffic Control Signals should be located at least 215 metres from adjacent crossing controls and the placement of the TCS should not be adversely impacted by the proximity of adjacent driveways. This location is further complicated with the presence of a reversible flow traffic lane. Comments regarding these issues are outlined below:

Spacing:

It is often difficult to maintain the preferred spacing requirements in the central area of the City and prospective locations are reviewed on their respective need and impact on safety. In this instance, midblock spacing is approximately 190 metres from adjacent traffic control signals and although substandard, no significant problem related to spacing is anticipated.

When undertaking our midblock pedestrian crossing survey, the section of Jarvis Street, between Dundas Street East and Gerrard Street East was split into two zones. “Zone A”,

extended from Gerrard Street East to a point approximately 180 metres south thereof and “Zone B”, extended from a point approximately 180 metres south of Gerrard Street East to Dundas Street East. Approximately 250 pedestrians (86%) crossed Jarvis Street in “Zone A” while approximately 40 pedestrians (14%) crossed in Zone B. The survey suggests that if PTCS were to be installed, it would be advisable to consider installation slightly north of the mid-point of the block to attract the majority of pedestrians crossing Jarvis Street.

Adjacent Driveways:

The number of circular driveways and entrances to parking garages located along Jarvis Street, between Dundas Street East and Gerrard Street East potentially presents a problem for installing the signal plant and associated hardware where the proximity of adjacent driveways will not adversely impact on the operation of the PTCS and safety.

Further review of this matter has revealed that it is possible to locate PTCS at a point approximately 170 metres north of Dundas Street East where adjacent driveways will not interfere with the operation of the signal plant. Although this location is somewhat south of the optimal location, it is the “best fit” for the block. Installation cost would be approximately \$76,000.00. However, some concern exists about motorists entering onto Jarvis Street within the immediate proximity of the controlled crossing area and perhaps not realizing they must stop on Jarvis Street in compliance with the north/south red signal display.

Reversible Centre Lane:

The five-lane cross-section on Jarvis Street is not specifically problematic for the operation of Pedestrian Traffic Control Signals. However, the reversible character of the centre lane presents some safety concerns. Operational safety depends on both the motorist and the pedestrian taking responsibility for their actions on the roadway. This traffic operation is unique and one that pedestrians might not be consciously aware of, thus creating a potential safety concern.

As the members of Council might be aware, consideration is underway to remove the reversible centre lane on Jarvis Street. A traffic impact study is currently underway concurrent with an environmental review regarding this matter. If these studies suggest that the reversible centre lane can be eliminated without adversely impacting on roadway operation, it is the likely option that staff will pursue. This would also eliminate one of the major concerns staff has about installing a PTCS on Jarvis Street at this time.

Of note, all funds provided in Transportation Services’ 2004 Operating Budget for the installation of traffic control signals have been allocated to currently approved projects. Therefore, should Community Council consider recommending the installation of PTCS on the subject section of Jarvis Street at this time, installation will be contingent upon funding availability in 2005 and relative priority compared to other approved TCS locations awaiting installation.

Conclusion:

Based on the findings of an investigation, the section of Jarvis Street, between Dundas Street East and Gerrard Street East numerically satisfies the warrants for the installation of Pedestrian Traffic Control Signals. However, there are environmental concerns regarding this location and their potential impact on operational safety. Although further review suggests that most of these concerns can be satisfactorily resolved, the issue of the reversible centre lane on Jarvis Street remains a major concern and for this reason staff are reluctant to recommend the installation of Pedestrian Traffic Control Signals at this time. Alternatively, it would be advisable to allow staff to complete the technical review associated with the suggested removal of the reversible centre lane on Jarvis Street and defer further consideration of installing Pedestrian Traffic Control Signals on Jarvis Street, between Dundas Street East and Gerrard Street East until that time.

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