



STAFF REPORT ACTION REQUIRED

Traffic Control Signals and Road Alteration - Yonge Street at Roxborough Street West and Roxborough Street East

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| Date: | December 10, 2010 |
| To: | Toronto and East York Community Council |
| From: | Director, Transportation Services Toronto and East York District |
| Wards: | Toronto Centre – Rosedale, Ward 27 |
| Reference Number: | Ts2011023te.top.doc |

SUMMARY

Transportation Services is requesting approval from City Council to install traffic control signals on Yonge Street at Roxborough Street West, and to alter the northeast corner of Yonge Street and Roxborough Street East to remove the existing right-turn channel.

The proposed traffic control signals will provide a safe and convenient crossing for pedestrians in this area while maintaining vehicular access to Yonge Street. Removal of the right-turn channel from Roxborough Street East to Yonge Street is required so that vehicles making this turn do not interfere with the pedestrian crossings. Overall, the environment for pedestrians will improve significantly. Service to vehicular traffic and transit on Yonge Street should not be impacted significantly.

RECOMMENDATIONS

Transportation Services recommends that:

1. City Council approve the alteration of the northeast corner of Roxborough Street East at Yonge Street, to remove the right-turn channel, generally as shown on Drawing No. 421G-0005 dated April 2010, attached to the report dated December 10, 2010, from the Director, Transportation Services, Toronto and East York District.
2. Contingent upon the approval of the road alteration on the northeast corner of Yonge Street and Roxborough Street East in Recommendation No. 1, City Council approve the installation of traffic control signals at the intersection of Yonge Street and Roxborough Street West.

Financial Impact

The adoption of the above-noted recommendations will result in the following financial impacts:

1. Preliminary cost estimates for modifications to the northeast corner of Yonge Street and Roxborough Street East are in the order of \$350,000.00. This project will be included in the Transportation Services 2011 Safety and Operational Improvement Program and construction would be subject to available funding and competing priorities. The Rosedale Main Street BIA will also be contributing towards the cost of this project.
2. The estimated cost of installing traffic control signals on Yonge Street at Roxborough Street West is approximately \$140,000. Funds in the amount of \$2,720,000 have been requested in the 2011 Transportation Services Capital Budget for installation of traffic control signals. This work would be subject to competing priorities and available funding.

ISSUE BACKGROUND

At the request of area residents and businesses, Transportation Services staff investigated the need to install a pedestrian crossover or traffic control signals across Yonge Street in the vicinity of Roxborough Street West.

COMMENTS

Intersection Characteristics

Yonge Street is classified as a major arterial roadway operating two-way in a northbound and southbound direction with a pavement width of 12.9 metres and a legal speed limit of 50 km/h. Yonge Street has a traffic volume of approximately 28,000 vehicles per day. The TTC operates the 97 Yonge bus route on this part of Yonge Street.

Roxborough Street West, in the vicinity of Yonge Street, is classified as a local roadway operating two-way in an eastbound and westbound direction with a pavement width of 10.0 metres and a legal speed limit of 30 km/h (traffic calmed section of roadway). Roxborough Street East in the vicinity of Yonge Street is also classified as a local roadway operating two-way (eastbound and westbound) with a pavement width of 10.0 metres and a legal speed limit of 40 km/h. Roxborough Street East and Roxborough Street West are offset by 45 metres at Yonge Street. Therefore, they operate as two separate "T"-type intersections.

Adjacent traffic control signals are located on Yonge Street at MacPherson Avenue (approximately 110 metres north of Roxborough Street West) and at Crescent Road (approximately 106 metres south of Roxborough Street East).

Study Results

Collision statistics provided by the Toronto Police Service for the three-year period ending December 31, 2009 disclosed that 21 collisions occurred at Yonge Street and Roxborough Street West and 16 collisions occurred at Yonge Street and Roxborough Street East. Five collisions occurred which may have been preventable with the installation of traffic control signals; four at Roxborough Street East and one at Roxborough Street West. Of these collisions, two involved pedestrians, one occurred crossing Yonge Street from Roxborough Street West and the other while crossing Roxborough Street East just east of Yonge Street.

A pedestrian traffic study, conducted during the busiest eight-hour period of a typical weekday, revealed that 465 pedestrians crossed Yonge Street in the vicinity of Roxborough Street West and Roxborough Street East. Of the 465 pedestrians, 274 were delayed more than 10 seconds in crossing Yonge Street. The majority of pedestrians were found to be crossing at Yonge Street and Roxborough Street West. Based on these results the technical warrants for the installation of a pedestrian crossover (PXO) are satisfied to the following extent:

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| Warrant 1: | Pedestrian Volume | 100 percent; and |
| Warrant 2; | Pedestrian Delay | 100 percent |

To meet the technical requirements for the installation of a PXO, both of the warrants must be 100 percent satisfied.

To further assess traffic conditions, an eight hour turning movement study was conducted in May of 2010 at Yonge Street and Roxborough Street West. Our turning movement study results were applied to the traffic control signal warrant analysis. The study results are as follows:

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| (a) | Minimum Vehicular Volume | 70 percent |
| (b) | Delay to Cross Traffic | 100 percent |
| (c) | Collision Hazard | 53 percent |

To meet the warrants, 100 percent compliance is required in one of the first two categories or a minimum of 80 percent compliance in any two. Given that Warrant (b) is met, traffic control signals could be justified.

Proposed Intersection Design

Transportation Services, in consultation with the Ward Councillor and the local Business Improvement Area, considered a number of options for providing assistance to pedestrians crossing in this area, from a pedestrian crossover to a full offset intersection including both Roxborough Street East and Roxborough Street West. The recommended configuration, with traffic control signals and pedestrian crossings on Yonge Street at Roxborough Street West, and elimination of the right turn channel from Roxborough Street East to Yonge Street, are generally as shown on attached drawing No. 421G-0005, dated April 2010.

Yonge Street and Roxborough Street West – Traffic Control Signals

This proposed design best serves the needs of pedestrians, vehicles, and transit in the area.

Currently, the existing right-turn channel from Roxborough Street East extends north on Yonge Street to Roxborough Street West. In order for the installation of traffic control signals to be feasible at this location, and to avoid conflicts between pedestrian crossings and right-turning vehicles, it is necessary to eliminate the existing right-turn channel at Roxborough Street East to form a standard "T"-type intersection with Yonge Street. Also, the elimination of the right-turn channel allows for the sidewalk on the northeast corner to be extended, narrowing the distance required for pedestrians to cross Roxborough Street East. The Rosedale Main Street Business Improvement Area has a planter installed on the existing traffic island, and they have committed to working with the City on the urban design and landscape initiatives for the new design.

Other options not recommended

A pedestrian crossover was not considered suitable for this area given the traffic volumes on Yonge Street and the high level of activity in this area. Similarly, a pedestrian-only signal was not feasible as it would make traffic movements difficult at both intersections of Yonge Street and Roxborough Street East and West. As well, there is a driveway on the west side of Yonge Street, immediately south of Roxborough Street West, which would interfere with the location of a pedestrian crosswalk.

We also reviewed incorporating Roxborough Street East as part of the proposed traffic control signals with Roxborough Street West, however, the 45-metre offset that would exist between the east and west branches of Roxborough Street at Yonge Street, would make it impracticable to place both intersections under the same traffic signal control. It has been our experience that signalization of significantly off-set intersections creates potentially serious operational problems with respect to ensuring pedestrians have right-of-way over vehicular traffic and clearly establishing right-of-way between straight-through and left-turning vehicles entering the intersection during the green signal indication from both off-set road legs. In this regard, pedestrian and vehicular conflicts could increase, as could collision potential. In addition, vehicles exiting and entering an existing driveway opposite Roxborough Street East would also be in conflict with opposing traffic movements within the intersection.

Summary

To provide enhanced protection for motorists, pedestrians and cyclists crossing Yonge Street in this vicinity, the installation of traffic control signals will enhance intersection safety and minimize conflicts between pedestrians, cyclists and motor vehicles. The removal of the existing right turn channel at Yonge Street and Roxborough Street East as proposed will enhance the pedestrian environment and allow for development of an amenity space to improve the streetscape.

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SIGNATURE

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LIST OF ATTACHMENTS

(1) Drawing No. 421G-0005 dated April 2010.

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