TORONTO

STAFF REPORT
ACTION REQUIRED

Traffic Control Signals – King Street West and Stanley Terrace

Date:	August 7, 2014
To:	Toronto and East York Community Council
From:	Director, Transportation Services, Toronto and East York District
Wards:	Trinity-Spadina, Ward 19
Reference Number:	Ts2014154te.top.doc

SUMMARY

Transportation Services has undertaken an operational review and safety audit of the intersection of King Street West and Stanley Terrace. The intent of this review was to determine the effectiveness and benefit of retaining the pedestrian crossover (PXO) at this intersection against the need to replace it with traffic control signals to enhance operational safety.

The safety audit revealed that the pedestrian crossover is generally operating safely. Further evaluation has indicated that the justifications for the installation of traffic control signals are not satisfied at the intersection of King Street West and Stanley Terrace. Therefore, the replacement of the pedestrian crossover with traffic control signals is not recommended.

RECOMMENDATION

Transportation Services recommends that:

1. City Council not approve the removal of the pedestrian crossover coincident with the installation of traffic control signals at the intersection of King Street West and Stanley Terrace.

Financial Impact

The adoption of the above-noted recommendation has no financial impact.

If, however, Toronto East York Community Council decides removing the pedestrian crossover on King Street West at Stanley Terrace and replacing it with traffic control signals would be beneficial, the total estimated cost would be approximately $170,000.00.

ISSUE BACKGROUND

Transportation Services was requested by Councillor Layton to report on the replacement of the existing pedestrian crossover (PXO) at King Street West and Stanley Terrace with traffic control signals to address safety concerns for pedestrians crossing this intersection.

COMMENTS

Existing Conditions

King Street West is a four-lane, major arterial roadway with a daily two-way traffic volume of about 20,000 vehicles and a speed limit of 50 km/h. There are streetcar tracks on King Street West that operate on a shared right-of-way with the median lanes. The median lanes are reserved for TTC vehicles and taxis between the hours of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., Monday to Friday. Transit service on King Street West is provided by the '504 King' streetcar and there are no stops at Stanley Terrace.

Stanley Terrace is a local roadway that operates one-way in the southbound direction. It intersects the north side of King Street West in a "T-type" intersection and is "Stop" controlled. Adjacent traffic control signals on this section of King Street West are located about 190 metres to the east, at Niagara Street, and about 150 metres to the west, at Strachan Avenue.

A pedestrian crossover (PXO) is located on King Street West, east of Stanley Terrace. This PXO provides crossing protection for north-south pedestrians in this area. There are parks located on the north and south sides of this intersection (both named Stanley Park) and the PXO provides a direct connection. The nearest school is located to the northeast, at the intersection of Niagara Street and Adelaide Street West (Niagara Street Junior Public School).

Collision Review

Collision statistics provided by the Toronto Police Service for the three-year period ending December 31, 2013 disclosed that seven collisions had occurred at the intersection of King Street West and Stanley Terrace. Of these seven collisions, two involved a pedestrian and the remaining five were rear-end collisions on King Street West. The two pedestrian collisions were considered to be potentially preventable by the installation of traffic control signals.

Traffic Control Signals

Traffic studies were undertaken at the intersection of King Street West and Stanley Terrace during the busiest eight-hour period of a typical weekday. The studies were initially undertaken in December 2012, however, it was felt by area residents that these were not representative of conditions at the intersection as the adjacent parks typically attract more pedestrians during the warmer months. Therefore, further studies were undertaken at this intersection in September 2013.

Based on the eight-hour vehicular and pedestrian traffic counts conducted at this intersection, and the collision history, the technical justifications for the installation of traffic control signals are satisfied to the following extent:

	December 2012	September 2013
Minimum Vehicular Volume:	3 percent;	7 percent;
Delay to Cross Traffic:	38 percent; and	64 percent; and
Collision Hazard:	13 percent.	13 percent.

To meet the technical requirements for the installation of traffic control signals, one of the Minimum Vehicular Volume or Delay to Cross Traffic justifications must be 100 percent satisfied, or any two of the three justifications must be at least 80 percent satisfied. Based on the above results, the installation of traffic controls signals was not justified at this intersection in either study.

Pedestrian Crossover Operations

Traffic studies were also undertaken to review the operating characteristics at the PXO. The studies recorded the number and type of pedestrians crossing King Street West within the painted crosswalk during the busiest eight-hour period of a typical weekday. There were 178 and 342 pedestrians recorded crossing during the December 2012 and September 2013 studies, respectively. The pedestrians were classified as follows:

	December 2012	September 2013
Youths and adults:	164 (92 percent);	299 (92 percent);
Assisted children:	14 (8 percent);	19 (6 percent);
Senior citizens:	0 (0 percent);	7 (2 percent);
Unassisted children:	0 (0 percent); and	0 (0 percent); and
Disabled:	0 (0 percent).	0 (0 percent).

As noted, the latter studies recorded significantly higher pedestrian volumes. However, these volumes still fall short of the minimum criteria required in the traffic control signal justifications.

Additionally, a review to assess any deficiencies in the operational and physical suitability of the PXO was carried out. By comparing the operation of the PXO to provincially adopted environmental standards it was determined whether the PXO is operating under acceptable conditions. The standards and the comparative characteristics at this location are described in more detail in the attached appendix.

Based on the review, the location of the PXO on King Street West and Stanley Terrace is suitable. The only potential concern is the spacing to adjacent traffic control devices falls below the minimum standards in both directions. It should be noted that this criterion would also make the installation of traffic control signals unsuitable. However, in the City of Toronto, this requirement has been reduced in downtown areas where there are slower operating speeds.

Conclusions

Based on the review, the intersection of King Street West and Stanley Terrace is operating satisfactorily and the installation of traffic control signals is not justified. Accordingly, the installation of traffic control signals to replace the existing pedestrian crossover is not supported. Additionally, the installation of traffic control signals at this intersection would result in the following negative impacts:

- Loss of Parking. As many as nine on-street parking spaces may need to be removed on King Street West;

- Traffic Infiltration. Non-local traffic volumes on Stanley Terrace could increase as it becomes easier for motorists to enter King Street West;

- Impacts to Transit. There will be an increase in delays to transit service on King Street West, which would be partially mitigated by the introduction of transit priority; and

- Impacts to Pedestrians. There may be an increase in delays to pedestrians, who will be required to wait for a "Walk" signal, rather than crossing upon pressing the pedestrian push button.

Alternate Recommendations

However, despite the findings and recommendations, if Toronto East York Community Council deems it is advisable and in the best interests of the community to replace the pedestrian crossover with traffic control signals at the intersection of King Street West and Stanley Terrace, it should adopt the following alternate recommendations:

1. City Council authorize the removal of the pedestrian crossover on King Street West at Stanley Terrace; and

2. Contingent upon the approval of alternate Recommendation No. 1, City Council authorize the installation of traffic control signals at King Street West and Stanley Terrace, coincident with the removal of the pedestrian crossover.

The removal of the pedestrian crossover and installation of traffic control signals at King Street West and Stanley Terrace would be subject to funding availability and competing priorities in 2015.

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SIGNATURE

Jacqueline White, P. Eng.
Director, Transportation Services
Toronto and East York District

LIST OF ATTACHMENTS

(1) Drawing No. 421G-1524, dated August 2014
(2) Appendix A - Table 1: Pedestrian Crossover Audit

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Appendix "A"
Pedestrian Crossover Audit
King Street West and Stanley Terrace

Standard	Characteristic	Met?
Speed – Vehicle operating speed less than 60 km/h	The posted speed limit on King Street West is 50 km/h.	Met
Width – Not more than four lanes wide on a two-way street, or more than three lanes wide on a one-way street	King Street West generally operates with two lanes of traffic in each direction.	Met
Volume – Traffic volume less than 35,000 vehicles per day (total of both directions)	King Street West carries about 20,000 vehicles per day in both directions.	Met
Turns – No significant volume of turning movements which interfere with PXO	The volume of traffic turning from Stanley Terrace is low and should not interfere with the PXO operation.	Met
Visibility – No visibility problems exist for either pedestrians or motorists	There are no visibility problems.	Met
Loading – No loading zones in the immediate vicinity	There are no TTC stops or commercial loading zones in the immediate area.	Met
Driveways – No driveways or entrances nearby	There are some minor residential driveways on Stanley Terrace in the vicinity of the intersection; however, these do not interfere with the operation of the PXO.	Met
Spacing – Not less than 200 metres to another pedestrian crossover or traffic control signal (TCS)	Strachan Avenue (TCS) – 150 metres Niagara Street (TCS) – 190 metres	Not Met