



STAFF REPORT ACTION REQUIRED

Bay Street and Davenport Road – Intersection Safety Review

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| Date: | April 17, 2015 |
| To: | Toronto and East York Community Council |
| From: | Director, Transportation Services, Toronto and East York |
| Wards: | Toronto Centre–Rosedale, Ward 27 |
| Reference Number: | Ts2015065te.top.doc |

SUMMARY

At its meeting of February 18, 2015 Toronto and East York Community Council adopted item TE4.62 a letter from Councillor Kristyn Wong-Tam requesting that the Director, Transportation Services, Toronto and East York District conduct an intersection safety review of Bay Street and Davenport Road and report back to the May 12, 2015 meeting of Toronto and East York Community Council.

In a letter to Toronto and East York Community Council, dated February 9, 2015, Councillor Wong-Tam requested Transportation Services staff to review six possible safety improvements for the intersection of Bay Street and Davenport Road. This report provides the results of that investigation.

RECOMMENDATION

Transportation Services recommends that City Council:

1. Not approve the removal of the north-south pedestrian crossing from the west leg of the intersection.
2. Not approve a grade change by raising all three pedestrian crossings.
3. Not approve the prohibition of right-turns on a red signal from 7:00 a.m. to 9:00 a.m., and from 4:00 p.m. to 6:00 p.m., Monday to Friday on the eastbound approach only.

4. Not approve the reduction of the maximum speed limit from 40 km/h to 30 km/h on Bay Street from Bloor Street West to Davenport Road.

Financial Impact

There are no financial impacts associated with the receipt of this report for information.

DECISION HISTORY

At its meeting of February 20, 2013, Toronto City Council amended item TE21.58 which contained a report dated December 17, 2012 from the Acting Director, Transportation Services, Toronto and East York District entitled "Road Alteration – Bay Street, between Davenport Road and Bloor Street West".

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.TE21.58>

At its meeting of March 20, 2014, Toronto City Council amended item TE30.96 which contained a report dated February 18, 2014, from the Director, Transportation Services, Toronto and East York District, entitled "Traffic Regulations-Bay Street and Davenport Road".

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.TE30.96>

At its meeting of February 18, 2015, Toronto and East York Community Council, amended Item TE4.62, which contained a letter dated February 9, 2015 from Councillor Wong-Tam, Ward 27, Toronto Centre-Rosedale, entitled "Traffic Regulations – Bay Street and Davenport Road Review".

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.TE4.62>

ISSUE BACKGROUND

In February 2013, Toronto City Council approved, among other things, a proposal to reconfigure the intersection at Bay Street and Davenport Road. Bay Street, from Davenport Road to Bloor Street West, was scheduled to be reconstructed in 2013. In anticipation of this work, a full review was completed on this section of Bay Street to improve the environment for all road users. During the design process Councillor Wong-Tam, Bloor Yorkville BIA, staff of Engineering and Construction Services, Transportation Services, Toronto Transit Commission, Public Realm, Cycling Infrastructure Management, Parks/Forestry and Recreation and Urban Design worked together to coordinate a number of improvements to the pedestrian and cycling environment on this section of Bay Street, including a complete redesign of the Bay Street and Davenport Road intersection. The new redesign reconfigured the intersection of Bay Street and Davenport Road by eliminating the existing eastbound to southbound right-turn channel from Davenport Road to Bay Street and replacing it with a wide boulevard space with streetscape enhancements and an improved pedestrian crossing environment. With the removal of the traffic island, this intersection was transformed into a "T" type intersection with Bay Street terminating at Davenport Road.

In March 2014, Toronto City Council approved changing the maximum speed limit on Bay Street (Bloor Street West to Davenport Road) and on Davenport Road (Yonge Street to Bay Street) from 50km/h to 40km/h in order to improve the crossing environment and over-all safety for all road users at this intersection. Toronto City Council also requested that the General Manager, Transportation Services study the operation of this intersection and report, if necessary, on any recommended changes to the August 27, 2014 meeting of Council (item TE30.96). A report was not submitted to the August 27, 2014 meeting of City Council. However, Transportation Services staff continued to work collaboratively with Councillor Wong-Tam's office on this matter.

At the Toronto and East York Community Council meeting on February 18, 2015, in response to further concerns raised by local residents and businesses in the area, Councillor Wong-Tam requested that Transportation Services review six intersection safety improvement proposals for Bay Street and Davenport Road, and report back to the May 12, 2015 meeting of Toronto and East York Community Council with the results (item TE4.62).

COMMENTS

Existing Conditions

Bay Street (Bloor Street West to Davenport Road) is classified as a major arterial roadway, has a pavement width that varies between 16 metres and 17 metres, operates in a northbound and southbound direction and has a posted speed limit of 40 km/h. It consists of two lanes for general traffic and a bicycle lane in each direction, north of Cumberland Street to Davenport Road. The curb lane for each direction, south of Cumberland Street, is a High Occupancy Vehicle (HOV) lane, reserved for the use of buses, taxis and bicycles, between the hours of 7:00 a.m. and 7:00 p.m., Monday to Friday.

Davenport Road (Avenue Road to Yonge Street) is classified as a major arterial roadway, has a pavement width that varies between 15 metres and 19 metres, and generally runs east/west. It consists of two lanes for general traffic and a bicycle lane in each direction. The posted speed limit on Davenport Road is 40 km/h.

This area is comprised of a mixture of land uses including professional, commercial, and residential components. In addition, Jesse Ketchum Junior and Senior Public School is located on the south/west corner of Bay Street and Davenport Road. Bay Street and Davenport Road accommodate the TTC Bus Route 6.

Transportation Services reconfigured the Bay Street and Davenport Road intersection in November 2013. The new design eliminated the existing eastbound to southbound right-turn channel from Davenport Road to Bay Street and replaced it with a wide boulevard space for streetscape enhancements and an improved pedestrian environment. With the removal of the traffic island, this intersection now forms into a "T" type intersection with Bay Street terminating at Davenport Road, generally as shown on attached Drawing No. 421G-1500, dated July 2014.

Safety Concerns

Following completion of the Bay Street and Davenport Road intersection redesign, residents expressed safety concerns with the new intersection and in particular with the pedestrian crossing environment on the west leg. Local residents indicated that vehicles travelling eastbound on Davenport Road destined for Bay Street or vehicles travelling northbound on Bay Street making a left-turn onto Davenport Road were not yielding the right-of-way to pedestrians crossing on the west side of this intersection.

Councillor Wong-Tam, in consultation with local residents, Jesse Ketchum Public School, the Greater Yorkville Residents Association (GYRA) and the ABC Residents Association requested that Transportation Services conduct an intersection safety review.

Intersection Safety Review

Transportation Services conducted various field observations at the Bay Street and Davenport Road intersection which revealed that the majority of motorists making these movements are stopping to yield the right-of-way for pedestrians. On occasion, motorists have been observed making these movements in a free flow manner resulting in a potential for conflict with pedestrians crossing.

Transportation Services staff are not aware of any collisions involving pedestrians during the brief period that this new intersection has been re-opened to traffic.

All the required pavement markings and signage have been implemented, and conform to Ontario Traffic Manual and HTA standards. As part of the City of Toronto's on-going effort to improve pedestrian safety, "Zebra Crosswalk" markings have also been implemented on all three crossings legs. The zebra design increases the visibility of the pedestrian crosswalk area for drivers and pedestrians during both day time and night time. Recent site inspections revealed that the pavement markings and signage are clearly visible and in good repair. The following are additional measures implemented to help improve the pedestrian environment and overall safety at this intersection for all road users:

- "Turning Traffic Must Yield to Pedestrians" advisory signs installed at all approaches;
- the maximum speed limit on Bay Street (Bloor Street West to Davenport Road) and on Davenport Road (Yonge Street to Bay Street) was reduced from 50km/h to 40km/h;
- a Leading Pedestrian Interval (LPI) was added on the west leg of the intersection. This phase allows pedestrians to start crossing five seconds prior to releasing northbound traffic, making them clearly visible to northbound left-turning motorists;
- "School Crossing Ahead" signs were installed on all approaches; and
- "School Area" signs were installed on all approaches.

As a result of further concerns raised by local residents and businesses in the area, Councillor Wong-Tam requested that Transportation Services review six additional intersection safety improvement proposals for Bay Street and Davenport Road.

Proposed Intersection Safety Improvements

The following is a review of six safety improvements proposed by local Councillor Kristyn Wong-Tam in an effort to improve the pedestrian environment at the intersection of Bay Street and Davenport Road:

- remove of the north-south pedestrian crossing from the west leg of the intersection;
- increase the Leading Pedestrian Interval (LPI) from five seconds to 20 seconds;
- introduce a grade change by raising all three pedestrian crossings;
- prohibit right-turns on a red from 7:00 a.m. to 9:00 a.m., and from 4:00 p.m. to 6:00 p.m., Monday to Friday on the eastbound approach only;
- introduce an exclusive pedestrian phase for all three pedestrian crossings; and
- reduce the maximum speed limit from 40 km/h to 30 km/h on Bay Street from Bloor Street West to Davenport Road.

Removal of the Pedestrian Crossing

Prior to reconfiguring the intersection of Bay Street and Davenport Road, pedestrian crossing opportunity was limited on the south and east approaches only. One of the key components during the re-design review was the need to provide pedestrians with the option to cross at all approaches. The intent was to improve the function and the pedestrian environment at this intersection.

Prohibiting pedestrians from using a particular crossing may reduce conflicts between vehicles and pedestrians. However, field observations conducted by Transportation Services staff over the years revealed that removing a pedestrian crossing opportunity from an intersection actually results in non-compliance by pedestrians and, thereby, increases the potential for vehicular /pedestrian conflicts. Field observations revealed that it is difficult to discourage pedestrians from using a particular crossing at an intersection as they will tend to cross a roadway at a point most convenient for them.

Transportation Services staff feel that the above-noted safety concerns outweigh any benefit that may be derived by removing the subject pedestrian crossing opportunity.

Increasing the Leading Pedestrian Interval (LPI)

In an attempt to help mitigate non-yielding behaviour by motorists and improve the pedestrian crossing environment, Transportation Services implemented a five second Leading Pedestrian Interval (LPI) on the west leg of this intersection in 2014.

The purpose of the LPI is to provide pedestrians with the opportunity to begin crossing the street before adjacent through movement vehicles are permitted to proceed. This allows pedestrians to establish a presence in the crosswalk which increases the visibility

of pedestrians to drivers and, thereby, reduces conflicts with turning vehicles. According to City of Toronto standards, Leading Pedestrian Intervals typically range between four to six seconds. This would allow enough time for a pedestrian to clear at least half of the crosswalk in one direction of moving traffic in order to increase visibility of pedestrians to turning traffic. In this regard, increasing the current LPI from five seconds to 20 seconds as requested is excessive and does not meet the City of Toronto LPI guidelines.

Implementing a Grade Change

Davenport Road and Bay Street are both classified as major arterial roadways that carry approximately 14,000 to 24,000 vehicles a day. Both Davenport Road and Bay Street also accommodate a TTC bus route (Bay 6).

Implementing a grade change in the form of raised crosswalks or a raised intersection is considered a traffic calming measure. According to the City of Toronto's "Traffic Calming Policy" and "Road Classification System", any significant traffic calming measures are not recommended on arterial roadways or on roadways that may have an impact to TTC transit service. In this regard, any proposed grade change to the intersection of Bay Street and Davenport Road is not feasible.

No Right-Turn on Red

In 2014 Councillor Wong-Tam, in consultation with area residents, requested that Transportation Services evaluate the need or feasibility of prohibiting right-turns on a red signal indication from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m., Monday to Friday, on the eastbound approach from Davenport Road to Bay Street in order to help improve the right-of-way and the pedestrian environment.

Capacity analysis revealed that delays to eastbound traffic on Davenport Road will significantly increase during the morning and afternoon peak periods if a "No Right Turn on Red" prohibition is introduced at this intersection. This may lead to increased driver frustrations and a corresponding decrease in compliance of the turn prohibition which would in-turn negatively impact pedestrian safety. Accordingly, Transportation Services did not recommend prohibiting right turns on a red from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m., Monday to Friday.

This matter was also considered by Toronto and East York Community Council on February 25, 2014 and by Toronto City Council on March 20, 2014 for final approval. At its meeting of March 20, 2014, Toronto City Council amended item TE30.96 which contained a report dated February 18, 2014, from the Director, Transportation Services, Toronto and East York District, entitled "Traffic Regulations-Bay Street and Davenport Road". At this meeting Toronto City Council, among other things, adopted Transportation Services recommendation not to prohibit right turns on a red from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m., Monday to Friday.

Implementing an Exclusive Pedestrian Phase

There are several pedestrian signal timings that can be implemented to address pedestrian crossing conflicts. These include an LPI, a pedestrian "scramble" phase and an exclusive pedestrian phase. The LPI was previously discussed in detail, and provides pedestrians with the opportunity to begin crossing the street before adjacent through movement vehicles are permitted to proceed. A pedestrian "scramble" phase stops vehicles on all approaches and allows pedestrians the opportunity to cross the intersection from all directions, including diagonally. Lastly, an exclusive pedestrian phase allows pedestrians to use the designated crosswalks while vehicles are given a red signal indication. Scramble or exclusive pedestrian phases are best suited to downtown areas with high pedestrian volumes occurring throughout the day. Technical guidelines established by City of Toronto staff, requires that an intersection being considered for a pedestrian priority phase must generate a minimum of 2,000 to 3,000 pedestrians per hour during an eight hour period. The intersection of Bay Street and Davenport Road generates approximately 300 pedestrians per hour, which is significantly below the required minimum.

In addition, exclusive pedestrian phases tend to contribute to an increase in vehicular delays that can have a negative impact on transit service.

Implementing a 30km/h Speed Limit

In March 2014 Toronto City Council approved reducing the speed limit on Bay Street (Davenport Road to Bloor Street West) and on Davenport Road (Bay Street to Yonge Street) from 50km/h to 40km/h. Councillor Wong-Tam requested that Transportation Services investigate the possibility of further reducing the speed limit on Bay Street (Davenport Road to Bloor Street West) from 40km/h to 30km/h.

In light of numerous requests from Ward Councillors to lower the posted speed limit to 30 km/h in the absence of traffic calming measures, Transportation Services has developed a set of criteria to ensure that the desired 30 km/h speed limit is appropriate. The proposed "30 km/h Speed Limit Policy" was considered by the Public Works and Infrastructure Committee on April 9, 2015 (item PW3.3).

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW3.3>

As per the technical warrant criteria outlined in the "30km/h Speed Limit Policy", 30km/h speed limits should only be allowed on local or collector roadways. Bay Street and Davenport Road are classified as major arterial roadways, and therefore, these roadways would not warrant criteria a 30 km/h speed limit.

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SIGNATURE

Kyp Perikleous
Director, Transportation Services
Toronto and East York District

LIST OF ATTACHMENTS

(1) Drawing No. 421G- 1500, dated July 2014

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