



STAFF REPORT ACTION REQUIRED

Bay Street and Davenport Road – Intersection Safety Review

Date:	October 16, 2015
To:	Toronto and East York Community Council
From:	Director, Transportation Services, Toronto and East York
Wards:	Toronto Centre–Rosedale, Ward 27
Reference Number:	Ts2015202te.top.doc

SUMMARY

As the Toronto Transit Commission (TTC) operates a transit service on Bay Street and Davenport Road City Council approval of this report is required.

Transportation Services is requesting approval to install a "No Right Turn on Red" prohibition for both the northbound and eastbound approaches of this intersection, that will operate at all times of the day.

RECOMMENDATION

Transportation Services, Toronto and East York District recommends that:

1. City Council prohibit right-turn movements on a red signal at all times on the eastbound approach only.
2. City Council prohibit right-turn movements on a red signal at all times on the northbound approach only.

Financial Impact

All costs associated with the installation of the "No Right Turn on Red" signage are included within the Transportation Services 2015 Operating Budget.

DECISION HISTORY

At its meeting of May 12, 2015, Toronto and East York Community Council referred back item TE6.44 which contained a report dated April 17, 2015 from the Director, Transportation Services, Toronto and East York District entitled "Bay Street and Davenport Road – Intersection Safety Review". The Toronto and East York Community Council requested that Transportation Services staff review the BA Group's study that was commissioned by the ABC Residents Association, and report back to the Toronto and East York Community Council for its meeting to be held on June 16, 2015.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.TE6.44>

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 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 50 km/h to 40 km/h. In order to improve the crossing environment and to address over-all safety concerns 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).

At its meeting of May 12, 2015, Toronto and East York Community Council referred back item TE6.44 which contained a report dated April 17, 2015 from the Director, Transportation Services, Toronto and East York District entitled "Bay Street and Davenport Road – Intersection Safety Review". The Toronto and East York Community Council requested that Transportation Services staff review the BA Group's study that was commissioned by the ABC Residents Association, and report back to the Toronto and East York Community Council for its meeting to be held on June 16, 2015.

Transportation Services required additional time to fully evaluate BA Group's study, and to further investigate safety measures that could be implemented at this intersection to help improve the crossing environment. In this regards, Councillor Kristyn Wong-Tam requested that Transportation Services submit a report to the November 10, 2015 Toronto and East York Community Council meeting on this matter.

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 Route 6 bus service.

In Nov 2013, the intersection of Bay Street and Davenport Road was reconfigured. The new configuration 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 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.

In addition, the ABC Residents Association commissioned the BA Group to conduct an independent safety review which will also be discussed in this report.

Intersection Safety Review - BA Group

The BA Group was retained by the ABC Residents Association to conduct an independent operational review of the Bay Street and Davenport Road intersection, with particular focus on the west side crossing of the intersection.

BA Group assessed the current traffic operation of this intersection and determined that physical changes to improve pedestrian-vehicular conflicts should not be pursued at this time. Their review predominately focused on the existing signal timing/phasing at Bay Street and Davenport Road, and provided 3 options in this regard to help improve the pedestrian environment at this intersection.

A brief summary of the signal timing/phasing options reviewed by BA Group is provided below:

- Option 1 – extending the current Leading Pedestrian Interval (LPI) from 5 seconds to 12 seconds.
- Option 2 – implementing an exclusive pedestrian phase at the west crosswalk.
- Option 3 - this option builds upon Option 2 with the addition of changing the northbound lane configuration to operate as dual left-turn lanes.

Capacity analysis conducted by BA Group revealed that while Options 1 and 2 provide more protection for pedestrians crossing at the west side crosswalk, the over-all intersection level of service will be negatively impacted if either of these signal timing changes were implemented. Under these signal timing scenarios, both northbound left-turn and westbound through/left-turn movements are forecasted to operate over capacity during the weekday morning and afternoon peak periods. In this regard, BA Group does not recommend these signal timing changes.

The third signal timing/phasing option investigated by BA Group incorporates implementing a dual left-turn movement in conjunction with an exclusive pedestrian phase as mentioned in Option 2. The current lane configuration for northbound traffic at this intersection is comprised of one lane that accommodates left-turns and one lane that accommodate right-turns (TTC buses accepted). Capacity analysis revealed that this option does "modestly" improve the over-all intersection level of service from existing conditions, and provides exclusive pedestrian protection crossing on the west side of the intersection. Based on their preliminary review, BA Group requested that City staff take this signal timing option into consideration.

BA Group also evaluated the following proposals:

- eliminating the crosswalk on the west leg of the intersection; and
- prohibiting right-turns on a red signal indication (eastbound approach)

Taking into consideration the negative impacts to pedestrian connectivity/accessibility if the west crosswalk were to be removed, BA Group determined that this proposal should not be pursued further. They also deferred consideration of the "No Right-Turn on Red" proposal back to Transportation Services for further review.

After further review, Transportation Services agrees with BA Group's analysis that separation is required between vehicular traffic and pedestrians at this intersection in order to provide full crossing protection. This can be accomplished by providing pedestrians with an exclusive phase while holding all traffic movements. Implementation of a dual northbound left-turn movement as suggested by BA Group is not recommended at this time.

Intersection Safety Review – Transportation Services

Transportation Services conducted one hour field observations between the hours of 8:00 a.m. and 5:00 p.m. at the intersection of Bay Street and Davenport Road from June 3, 2015 to June 16, 2015. During this period, a total of 370 pedestrians were observed crossing the west leg of this intersection. Field observations revealed that the majority of these pedestrians completed their crossing without difficulty, and that turning motorists were stopping to yield the right-of-way. On occasion, motorists were observed making these turning movements in a free flow manner, resulting in a potential for conflict with pedestrians crossing.

The review indicated that adequate "walk" time has been provided on all crossings, and that the majority of pedestrians observed safely completed their crossing during the time given. Over-all, the intersection of Bay Street and Davenport Road is operating effectively from a capacity and safety perspective. Of note, Transportation Services are not aware of any collisions involving pedestrians at Bay Street and Davenport Road since the new intersection has been re-opened to traffic.

However, lieu of the growing pedestrian safety concerns expressed by area residents and school officials at Jesse Ketchum Junior and Senior Public School, Transportation Services was requested to re-investigate implementing an "exclusive pedestrian phase" at Bay Street and Davenport Road.

Exclusive Pedestrian Phase

Taking into consideration the various pedestrian generators currently present in the immediate vicinity of this intersection (Jesse Ketchum Junior and Senior Public School, Belmont House Retirement Living, shopping and condominium living), Transportation Services recommends implementing an "exclusive pedestrian phase" at the intersection of Bay Street and Davenport Road.

An exclusive pedestrian phase allows pedestrians to use the designated crosswalks at this intersection while vehicles are given a red signal indication. This signal timing change separates pedestrian movements, from vehicular movements, by providing pedestrians and vehicles with their own signal phases. During this phase, pedestrians will be allowed to use all crossings at the same time. However, **diagonal crossings will not be allowed** under this proposal.

In conjunction with this signal timing change, Transportation Services also recommends implementing "No Right Turn on Red" prohibitions that will operate at all times of the day for both the northbound and eastbound approaches, generally as shown on attached Drawing No. 421G-1932, dated October 2015. Right-turns must be prohibited during the "exclusive pedestrian phase" in order to ensure full crossing protection for pedestrians. This safety measure will deter pedestrian/vehicular conflicts and improves the pedestrian crossing environment at Bay Street and Davenport Road significantly.

Transportation Services will continue to monitor delays and congestion at this intersection and make any necessary signal timing changes to help alleviate capacity concerns.

Toronto Transit Commission (TTC) Bus Stop Relocation

Bay Street and Davenport Road accommodates TTC 6 Bay bus service. The bus route generally operates in a north-south direction between the area of Dupont Street and Bedford Road, and from Queens Quay East and Lower Sherbourne Street. Currently bus stops are located on south side of Davenport Road (west of Bay Street), and on the east side of Bay Street (south of Davenport Road).

Passengers are picking-up/dropping-off at the Bay Street bus stop from the curb lane on the east side of Bay Street, just south of Davenport Road. This lane functions as an exclusive right-turn lane, but TTC buses are exempt and can legally make a left-turn onto Davenport Road from this lane. Recent site-observations revealed that, on occasion, motorists are following the buses and are also making a left-turn from the right-turn lane. Motorists' making a left-turn from an exclusive right-turn lane is illegal.

Transportation Services has advised the TTC of this safety concern and requested that the bus stop on Bay Street be relocated to the far-side of this intersection. Specifically, on the north side of Davenport Road, west of Bay Street. Under this scenario, TTC buses will be required to make a northbound left-turn movement from the left-turn lane in order to access the bus stop. This should deter the double left-turn movement making this intersection operate more safely. Toronto Transit Commission staff is currently investigating this proposal.

Councillor Kristyn Wong-Tam has been advised of the recommendation of this staff report.

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SIGNATURE

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LIST OF ATTACHMENTS

1. Drawing No. 421G- 1500, dated July 2014
2. Drawing No. 421G-1932, dated October 2015

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