



**STAFF REPORT
ACTION REQUIRED**

**Left Turn Lanes - Harbour Street at Bay Street and
Yonge Street**

Date:	October 29, 2008
To:	Toronto and East York Community Council
From:	Director, Transportation Services Toronto and East York District
Wards:	Toronto Centre-Rosedale, Ward 28
Reference Number:	Ts08162te.top.doc

SUMMARY

Transportation Services is responding to a request from Toronto and East York Community Council to report on the feasibility of changing the dual eastbound left-turn lanes from Harbour Street to Bay Street and to Yonge Street, to single left-turn lanes. The objective of this request is to provide pedestrian crossings on the north side of each intersection.

The subject area is in fundamental transition, from its historic role as the major high capacity transportation corridor for the downtown, to its emergence as a prominent new neighbourhood with tens of thousands of new residents and other destination venues generating a need for vastly improved pedestrian amenities.

With the completion of a residential development on the northeast corner of Harbour Street and Bay Street, there will be more pedestrians wanting to cross the north side of this intersection. Although there will be a significant increase in delays to eastbound left-turn traffic on Harbour Street, the dual left-turn movement can be changed to a single left-turn movement at Bay Street. This will then allow for a pedestrian crossing on the north side of this intersection.

The implications of a similar change at Harbour Street and Yonge Street at this time would be much more severe. Changing the dual left-turn movement to a single left-turn movement would cause queues to back up through Bay Street, affect the Yonge Street off-ramp from the F.G. Gardiner Expressway, and may result in safety concerns with merging traffic on Harbour Street. In addition, the pedestrian demand is currently considerably less. Accordingly, Transportation Services is recommending that any

changes contemplated should be included as part of the ongoing Environmental Assessment of the Yonge/York/Bay ramps.

RECOMMENDATIONS

Transportation Services recommends that City Council:

1. Change the designation of the centre eastbound traffic lane on Harbour Street, from Bay Street to a point 30.5 metres west, from left turn and through movements only, to through movements only.
2. Not alter the lane designations on eastbound Harbour Street at Yonge Street at this time, pending consideration of such changes in the current Environmental Assessment.

Financial Impact

Type of funding	Source of funds	Amount
Available within current budget	Toronto Transportation Services 2008 Traffic Plant Requirements – CTP 707-07	\$12,000.00

DECISION HISTORY

City Council, at its meeting on July 15, 16 and 17, 2008, adopted Item TE17.51 entitled, “Road Alterations - Bay Street and Harbour Street”. Under this item, Toronto and East York Community Council requested the General Manager, Transportation Services to report:

- (a) in September, 2008, on the reduction of the double left hand turning lanes on eastbound Harbour Street at Bay Street and Yonge Streets; and
- (b) by the end of 2008 on the implementation of bicycle lanes on Bay Street between Front Street East and Queen’s Quay.

Further, at this same meeting, City Council approved Item EX22.2, entitled “Environment Assessment for Changes to York and Bay Ramps of Gardiner Expressway”, which contained a recommendation authorizing the General Manager, Transportation Services, to conduct a Class Environmental Assessment Study (Class EA) of potential modifications to the York/Bay/Yonge Streets eastbound off ramp and the Bay Street eastbound on ramp of the elevated Gardiner Expressway. The objective of the potential modifications will be to support and enhance improvements in the pedestrian realm proposed in the York Street and Bay Street Pedestrian Promenade Plans, and to improve cycling connections, public spaces and parks.

This report only deals with the request to remove the double left-turn lanes on eastbound Harbour Street at Bay Street and at Yonge Street, in order to provide pedestrian crossings on the north side of these intersections.

COMMENTS

The Lake Shore Boulevard/Harbour Street corridor traversing the lower waterfront region of downtown Toronto is an area in profound transition. The corridor has, for decades, been little more than a major transportation conduit feeding a limited number of north/south access routes across the rail corridor and into the downtown. Harbour Street/Lake Shore Boulevard West in the vicinity of Bay and Yonge Streets carries in the order of 40,000 vehicles daily, with many of these accessing from the F.G. Gardiner Expressway ramps. Bay and Yonge Streets carry in the order of 15,000 and 18,000 vehicles per day, respectively, north of Harbour Street, many of which come from the dual left-turn lanes at these intersections.

At the same time these traffic demands remain unsubsidized, the area is experiencing a significant renaissance with tens of thousands of new residents and regional cultural and sporting venues settling in. Many tangible initiatives have been taken over the past five years to build a viable neighbourhood and introduce improvements to the pedestrian environment.

It is against this backdrop of transitional frictions and competing demands that Transportation Services has assessed the implications of eliminating the dual left-turn lanes and introducing more inviting pedestrian amenities. The results and conclusions summarized in this report are based on comprehensive traffic counts and studies, and detailed computer simulations of pedestrian and traffic movements for the scenarios.

HARBOUR STREET AND BAY STREET

Existing Conditions

There are four lanes on the west side of the Harbour Street/Bay Street intersection. Three of the lanes are from eastbound Harbour Street and they are designated for left turns, left turns and through, and through only, respectively. The fourth eastbound lane, separated from Harbour Street by a concrete median, is the off-ramp from the F.G. Gardiner Expressway to Yonge Street. There are three discharge lanes on the east side of Bay Street. Pedestrians are prohibited from crossing on the north side of the intersection to prevent conflicts with the dual left-turn movement.

The Toronto Transit Commission operates the 6 BAY and 97 YONGE bus routes through both intersections.

Approximately 4,700 eastbound left turns are performed at this intersection during the peak 8 hours of a typical weekday. Of these, 700 are made during each of the morning and afternoon peak hours and an average of 550 per hour are made during off peak hours. During the morning peak hour, we observed left-turn queues in the eastbound left-turn lane and centre lane of more than 15 vehicles with delays of less than a minute. Approximately 65 per cent of eastbound left turns are made from the northerly left-turn lane.

There is an on-ramp to eastbound F.G. Gardiner Expressway from northbound Bay Street, just north of Harbour Street. This ramp, which is the subject of the Environmental Assessment to determine the viability of its closure, accounts for a significant volume of the left turns from Harbour Street. Approximately 350 vehicles/hour use this ramp during peak periods. It is likely that eastbound left-turning volumes from Harbour Street to Bay Street would be reduced if access to the F. G. Gardiner Expressway ramp was not provided at this location.

The traffic volume on the eastbound off-ramp during the morning peak hour is 1,300 vehicles, of which 1,000 vehicles proceed eastbound through the intersection to Yonge Street and beyond, with the remainder turning right to southbound Bay Street. During the afternoon peak hour, the majority of the 500 vehicles proceed towards Yonge Street from the off-ramp.

We reviewed the Toronto Police Services collision records and did not find a significant pattern of pedestrian collisions at this intersection. During the 3-year period ending August 1, 2008, one collision involving a pedestrian was reported. In that incident, a pedestrian on the northeast corner was struck by a vehicle that had been struck by another vehicle.

Proposed Changes and Impacts

Transportation Services staff have assessed the potential impacts of changing the eastbound lanes on Harbour Street, approaching Bay Street, to a single left-turn lane and two through lanes and allowing pedestrian crossings on the north side.

Pedestrian crosswalks are currently only provided on the east, south, and west sides of the intersection. With a north side crosswalk, pedestrians would be able to cross between the northeast and northwest corners of the intersection without making three separate crossings. This will become more important with the completion of the residential development on the northeast corner of Harbour Street and Bay Street. There will be some potential of conflict between eastbound left-turning vehicles and pedestrians on the north side, but it will be no different than most other typical intersections where drivers must yield to pedestrians when making a left turn on a green light. We will mitigate this somewhat by providing an advanced green for vehicles to clear the left turns before pedestrians start to cross.

Eastbound queues on Harbour Street at Bay Street are projected to more than double, extending to more than 30 vehicles with a corresponding delay of 2 minutes to clear the intersection during the morning peak hour. During other times of the day, delays and queues would also increase. However, the most significant impact would be during the morning peak hour. These results can vary significantly throughout the day, depending on the traffic travelling to and from the F.G.Gardiner Expressway.

Currently, drivers heading to Bay Street from the eastbound F.G.Gardiner Expressway take the York/Bay off-ramp, and then make a right turn to Harbour Street at York Street. They then make a single lane change to turn left to Bay Street northbound. With a

change in the lane designations at Bay Street, these motorists would be required to make two lane changes in order to be in the proper left-turn lane at Bay Street. The spacing between York Street and Bay Street is 220 metres, which should be sufficient to make this move.

Changing the dual left-turn movement to a single left-turn movement and providing a north side pedestrian crossing will require new pedestrian signal displays, changes to signal timings, and modifications to the signs and pavement markings at the intersection.

The proposed changes at this intersection could be made now, without waiting for the outcome of the environmental assessment for changes to the York and Bay ramp of the F.G. Gardiner Expressway.

HARBOUR STREET AND YONGE STREET

Existing Conditions

There are three eastbound lanes on Harbour Street at Yonge Street. These lanes are designated for left turns only, left turns and through, and through with a right-turn channel, respectively. There are two discharge lanes on the east side of Yonge Street. Pedestrians are prohibited from crossing on the north side of the intersection to prevent conflicts with the dual left-turn movement.

Approximately 4,700 eastbound left turns are performed at this intersection during the peak 8 hours of a typical weekday. Of these, 800 are made during the morning peak hour, 400 during the afternoon peak hour and an average of 550 per hour are made during off peak hours. During the morning peak hour we observed queues of more than 15 left-turning vehicles with delays of less than a minute. Eastbound left turns are equally distributed between the northerly left-turn lane and centre eastbound lane.

A primary source of eastbound left-turning traffic to Yonge Street originates from the F. G. Gardiner Expressway off-ramp at Bay Street.

We reviewed the Toronto Police Services collision records and did not find any pedestrian collisions at this intersection during the 3-year period ending August 1, 2008.

Proposed changes and impacts

Transportation Services staff have assessed the potential impacts of changing the eastbound lanes on Harbour Street, approaching Yonge Street, to a single left-turn lane and two through lanes with the right turn channel.

Pedestrian crosswalks are currently only provided on the east, south, and west sides of the intersection. There is no development on the northeast corner of this intersection due to the close proximity of the F.G. Gardiner Expressway at this location. As a result there is very little demand for pedestrians to cross between the northeast and northwest corners of this intersection. Most pedestrian crossings are accommodated on the existing three crosswalks. A north side crosswalk would increase flexibility for pedestrians, but it

cannot be installed while a dual left-turn movement is provided from Harbour Street to Yonge Street due to potential conflicts with vehicles.

Eastbound queues on Harbour Street at Yonge Street are projected to extend to more than 30 vehicles with a corresponding delay of up to 4 minutes to clear the intersection during the morning peak hour. During the afternoon peak hour, the impact to the eastbound queues and delays would not be as significant as during the morning peak hour. Delays would be variable during the day depending on the volume of traffic originating from the eastbound F. G. Gardiner Expressway.

Currently, drivers heading to Yonge Street from the eastbound F.G. Gardiner Expressway take the Yonge off-ramp, then travel through at Bay Street. They must then make a single lane change to merge with eastbound Harbour Street traffic and then turn left to Yonge Street northbound. If the dual left-turn movement is changed, these drivers would be required to make two lane changes in order to be in the proper left-turn lane at Yonge Street. This section of roadway is much shorter (185 metres) than the section of Harbour Street between York Street and Bay Street. There is also a significant curve in Harbour Street between Bay Street and Yonge Street. With longer queues for the left turn at Yonge Street, these lane changes would be very difficult. There is a potential of vehicles stopping in the eastbound lanes of Harbour Street, while waiting to merge with left-turning traffic, and also of making an illegal dual left-turn movement at Yonge Street

These factors lead us to conclude that the dual left-turn movement should not be changed at Yonge Street with the existing F.G. Gardiner ramp configurations at this time. Further consideration of this proposal should be included in the environmental assessment for changes to the York and Bay ramps.

Environment Assessment for Changes to York and Bay Ramps of Gardiner Expressway

The Environmental Assessment for changes to York and Bay Ramps of the F. G. Gardiner Expressway has been initiated by Transportation Services.

If there are changes to the F.G. Gardiner Expressway ramps as a result of this study, there could be impacts to the traffic patterns turning on to both Bay Street and Yonge Street. Specifically, if the location of on and off-ramps change, the left-turning volumes could change, and the need for motorists to make multiple lane changes to access the left-turn lanes could change as well. The lane designations on Harbour Street at Bay Street, and at Yonge Street, and therefore the provision of pedestrian crosswalks at these intersections, can be re-assessed as part of this study, or following implementation of any changes.

CONTACT

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SIGNATURE

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LIST OF ATTACHMENTS

(1) Drawing Nos. 421F-9426, 421F-9427 and 421F-9442, dated September 2008

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