

Operational Changes to Traffic Control Signal: Bayview Avenue at 2365 Bayview Avenue (Crescent School)

Date:	September 18, 2009
To:	North York Community Council
From:	Director, Transportation Services Division, North York District
Wards:	Ward 25 – Don Valley West
Reference Number:	<i>ny09066</i>

SUMMARY

To obtain approval to rescind the existing westbound left turn prohibition at Bayview Avenue at the access to 2365 Bayview Avenue (Crescent School).

The removal of the above-noted traffic control measure will provide full movement egress from the access to Crescent School and improve southbound traffic operations on Bayview Avenue during the peak periods.

Since the Toronto Transit Commission (TTC) operates a transit service on Bayview Avenue, City Council approval of this report is required. TTC staff has been consulted on the proposed turn prohibition removal and have not objected to the proposal.

RECOMMENDATIONS

Transportation Services Division recommends that City Council:

1. Rescind the existing westbound left turn restriction at all times, from the access to 2365 Bayview Avenue (Crescent School).

FINANCIAL IMPACT

All costs associated with the removal of the left turn prohibition and the modifications to the existing traffic control signals and driveway access will be borne by the Crescent School.

ISSUE BACKGROUND

In December 1996, Metropolitan Council approved the installation of a half-signal configuration at Bayview Avenue and the access to 2365 Bayview Avenue (Crescent School). This half-signal is interconnected and operates in unison with the traffic control signals situated at the Granite Club/Bob Rumball Centre, 115 m to the north of the Crescent School access on Bayview Avenue.

In the years since this half-signal operation was implemented, traffic volumes into the Crescent School have increased such that the southbound left turning volumes now routinely exceed the storage space available for southbound left turns during the morning peak period. The overflow of the left turn storage lane blocks the adjacent southbound through lane resulting in considerable congestion through this area of Bayview Avenue. To improve traffic flow through this area and access/egress to the Crescent School, it is recommended that the existing westbound left turn prohibition at the access to the Crescent School be rescinded thereby allowing full movements out of the Crescent School driveway.

COMMENTS

The Crescent School has been in existence on Bayview Avenue for a number of years. The driveway access at the Crescent School is a “T” type intersection with Bayview Avenue. Over the years, as traffic volumes on Bayview Avenue have increased and enrolment at the Crescent School have increased the driveway access control has been evolving. Prior to 1984 the access operated with full outbound movements from the driveway onto Bayview Avenue. In 1984 to address accident problems related to outbound left turns onto Bayview Avenue, the westbound left turn movements out of the access were prohibited at all times. With this prohibition all outbound vehicles could now only turn right. At the present time, vehicles intending to travel south from Crescent School turn right and then proceed 115 m to the north on Bayview Avenue, turn right at the Bob Rumball/Granite Club signal, make a u-turn in the Bob Rumball driveway and then proceed south on Bayview Avenue via a westbound left turn. This is shown in Attachment 2. In 1996, after a flashing warning beacon failed to improve inbound left turn and outbound right turn movements from the access, Metropolitan Toronto approved the installation of a “half-signal” operation. This half-signal operation retained the westbound left turn restriction thereby allowing the southbound through movements on Bayview Avenue to receive a continuous green display and never be stopped. This half-signal was approved due to the short block spacing of 115 m between the Crescent School access and the traffic signals at the Granite Club/Bob Rumball Centre located to the north. Pedestrian crossings of Bayview Avenue were also prohibited in conjunction with the half-signal operation.

This half-signal is interconnected and works in unison with the traffic signal at the Granite Club/Bob Rumball Centre in that the east/west green phase at the Granite Club/Bob Rumball Centre is provided at the same time as the southbound left/westbound right phase at Crescent School. This prevents northbound traffic from being stopped twice and maintains north/south through flows through this area. However the timing of the traffic signals at the Crescent School is limited by the duration of the east/west green phase at the Granite Club/Bob Rumball Centre.

In recent years, Transportation Services have received a number of complaints regarding the southbound congestion through this area of Bayview Avenue during the morning peak periods. In response to these complaints Transportation Services, in conjunction and with the co-operation of the Crescent School, have reviewed and analyzed the operation of the Crescent School access.

At that time the signals were originally installed at Crescent School in 1997, 146 vehicles or approximately 68% of the inbound trips to the school during the am peak period originated from the south via a northbound right turn. The remaining traffic (68 vehicles) entered from the north via a southbound left turn. Based on this left turn volume adequate storage for these left turn vehicles was provided on Bayview Avenue.

Over the years since activation, the traffic volumes into the school have increased and there has been a change in the origin of the trips into the school. A recent traffic count indicates that 109 vehicles or 34% of the inbound trips originated from the south while southbound left turn volumes originating from the north constitute 66% of the inbound trips. The southbound left turn volume now equals 213 vehicles during the am peak period. Due to the increased southbound left turn demand, the storage space for left turns is often exceeded and spills out into the adjacent through lane effectively reducing the southbound through capacity. This reduction in southbound capacity results in considerable southbound congestion through this area during the peak school times.

With the increase in volumes into the school, the outbound right turn volume has also increased such that the single outbound lane is operating at capacity. The higher volume of outbound right turns backs up traffic within the Crescent School property. This back-up results in delays in vehicles exiting the property and also results in inbound vehicles being delayed. This inbound delay backs up both the northbound and southbound turning movements into the property and increases the queue lengths for these movements. The increased queue lengths for the southbound left turn movement are therefore a result of increased volumes and well as delays getting into the site.

Due to the current westbound left turn restriction from the access, the impact of the circuitous routing of outbound movements from the Crescent School previously described frequently results in the signal at the Bob Rumball/Granite Club cycling and extending to the maximum green. When the signal extends to the maximum east/west green, the southbound through green is reduced. This reduction in the green time combined with a blocked through exit lane (caused by the southbound left turn lane vehicles at the Crescent School extending out of the left turn lane into the adjacent

through lane) further reduces the southbound capacity resulting in congestion through this intersection.

This circuitous movement accounts for approximately 50% of the outbound right turns from the school. This circuitous routing, while acceptable in the past, is not considered acceptable today since the success of the half-signal operation is dependent on traffic from one private property owner (Crescent School) being diverted through the access of another private property owner (Bob Rumball Centre). No formal agreement exists between the Crescent School and the Bob Rumball Centre regarding the re-routing of this traffic.

Proposed Improvements

To eliminate the circuitous routing for traffic through an adjacent private property and to reduce southbound left turn delays and queuing, Transportation Services has recommended that the half-signal operation at the Crescent School be converted to a full signal operation. In conjunction with this change, the access to the Crescent School will be widened to provide separate outbound right and left turn lanes. The existing prohibition of pedestrian crossings of Bayview Avenue will be retained at the access to the Crescent School.

By converting the signal to a full operation the outbound left turn movement from the Crescent School driveway will be allowed which will eliminate the circuitous routing of outbound trips. This will result in reduced volumes at the Bob Rumball/Granite Club driveway thereby reducing the east/west green times and increasing the southbound green time. In addition with this change, the outbound flow from the Crescent School property will be improved thereby reducing the back-ups on the property and improving the inbound flow. This improved inbound flow will improve the southbound left turn movement and reduce the left turn queuing and the potential for the left turn queues to spill back into the adjacent through lane. A full signal operation will also allow the flexibility in the signal timings and phasing to provide a longer southbound advanced left turn display at the Crescent School signal thereby further reducing southbound left turn queues on Bayview Avenue. Although a full signal at the Crescent School will now require southbound through traffic to stop at this signal, the available southbound green time will still be adequate to handle the demand.

With a full signal operation, this signal will continue to work in unison with the traffic signal at the Granite Club/Bob Rumball Centre in that the east/west green phase at the Granite Club/Bob Rumball Centre will be provided at the same time as the outbound phase at the Crescent School. In addition the existing northbound advance left turn phase at the Granite Club/Bob Rumball Centre will operate at the same time as a new southbound advanced green phase at the Crescent School. Overall north/south through traffic will not be stopped twice and north/south through flows through this area will be maintained.

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The Crescent School is in agreement with the proposed changes and have completed the access improvements required. All costs associated with the half to full signal conversion, removal of the westbound turn prohibition signs as well as the access improvements will also be borne by the Crescent School. In view of the above, Transportation Services supports the removal of the westbound left turn prohibition at the Crescent School access.

Councillor Cliff Jenkins supports the recommendations of this staff report.

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SIGNATURE

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ATTACHMENTS

- Attachment 1: Map – Westbound Left Turn Prohibition Removal, Bayview Av at Crescent School (2365 Bayview Avenue) (*ny09066_map1*)
- Attachment 2: Map – Existing westbound to southbound routing from the Crescent School (*ny09066_map2*)