

## **Traffic Control Signals - Richmond Street West and Simcoe Street**

**Date:** March 8, 2017  
**To:** Toronto and East York Community Council  
**From:** Acting Director, Transportation Services, Toronto and East York District  
**Wards:** Ward 20, Trinity-Spadina

### **SUMMARY**

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As the Toronto Transit Commission (TTC) operates a transit service on Richmond Street West, City Council approval of this report is required.

Transportation Services has undertaken an operational review of the intersection of Richmond Street West and Simcoe Street. The results of our review indicate that the installation of traffic control signals are technically warranted. However, due to the close proximity of adjacent traffic control signals, Transportation Services does not recommend the installation.

### **RECOMMENDATIONS**

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The Acting Director, Transportation Services, Toronto and East York District, recommends that:

1. City Council deny the installation of traffic control signals at the intersection of Richmond Street West and Simcoe Street.

### **FINANCIAL IMPACT**

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There is no financial impact resulting from the adoption of the recommendation in this report.

### **DECISION HISTORY**

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This report addresses a new initiative.

## COMMENTS

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Transportation Services, Toronto and East York District, was requested by Councillor Joe Cressy to report on the feasibility of installing traffic control signals at the intersection of Richmond Street West and Simcoe Street to address safety concerns for crossing pedestrians.

Richmond Street West is a major arterial roadway that operates one-way in the westbound direction on a pavement width of about 14 metres. It has a posted speed limit of 40 km/h and a daily traffic volume of about 15,550 vehicles. Simcoe Street is a collector roadway that operates one-way in the southbound direction that is stop controlled at Richmond Street West. It has a regulatory speed limit of 50 km/h and a daily traffic volume of about 2,700 vehicles. Adjacent traffic control signals are located about 155 metres to the west at Duncan Street and about 42 metres to the east at University Avenue. The land use in this area is predominantly commercial and residential. TTC service on Richmond Street West is provided by the '145 Downtown / Humber Bay Express' bus.

### Collision Review

Collision statistics provided by Toronto Police Service for the three-year period ending December 31, 2016 disclosed that twenty-one collisions had occurred at the intersection of Richmond Street West and Simcoe Street. Of these twenty-one collisions, five were potentially preventable by the installation of traffic control signals and one involved a pedestrian.

### Analysis

On August 18, 2015 traffic studies were undertaken at the intersection of Richmond Street West and Simcoe Street during the busiest eight-hour period of a typical weekday. 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:

<b>Justification 1:</b>	Minimum Vehicular Volume	98 percent
<b>Justification 2:</b>	Delay to Cross Traffic	93 percent
<b>Justification 3:</b>	Collision Hazard	33 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 is justified.

On February 15, 2017, a one-hour gap study was undertaken at the intersection of Richmond Street West and Simcoe Street during the a.m., p.m. and off peak periods. A gap study quantifies the number of gaps (in seconds) that exist between vehicles in the major traffic flow at a specific reference point. The data is then used to determine the number of safe opportunities the gaps provide for pedestrians, vehicles and cyclists to cross during a defined time period.

Based on a 14 metre crossing distance of Richmond Street West at Simcoe Street, and a 1.0 m/s walking speed, at least 21 seconds of pedestrian walking time would be required for a safe crossing. The gap study showed that pedestrians received an adequate number of crossing opportunities. During all three time periods a range between 19-28 gaps in traffic was recorded that were 21 seconds or longer. Site lines are excellent at this intersection, and pedestrians are required to focus on the following traffic movements only:

- westbound traffic on Richmond Street West
- southbound traffic on Simcoe Street

The block length on Richmond Street West, between University Avenue and Simcoe Street is only 42 metres long, and will not provide enough storage to accommodate traffic volumes generated from University Avenue. Traffic spill-over is anticipated to generate a queue that will extend the intersection of Richmond Street West and University Avenue resulting in grid-lock, congestion and delays.

On September 15, 2016, traffic studies were undertaken at the intersection of Richmond Street West and University Avenue during the busiest eight-hour period of a typical weekday. Southbound right-turns and northbound left-turns are the critical movements that will generate a significant traffic volume on Richmond Street West, between Simcoe Street and University Avenue when westbound traffic is stopped. According to the study, the following traffic volumes were recorded within this block:

- 300 vehicles during the am peak hour (8:15 a.m. to 9:15 a.m.)
- 430 vehicles during the pm peak hour (4:00 p.m. to 5:00 p.m.)
- 365 vehicles during the off-peak hour average
- 2,800 total vehicles during the 8-hour period

Based on the lack of storage space available on Richmond Street West, between University Avenue and Simcoe Street, and the traffic volumes anticipated within this block, Transportation Services does not recommend the installation of traffic control signals at the intersection of Richmond Street West and Simcoe Street.

Furthermore, Transportation Services has concerns regarding the potential traffic impacts at the intersection of Queen Street West and Simcoe Street. Simcoe Street may become a desirable route should traffic control signals be implemented at Richmond Street West. The block length on Queen Street West, between University Avenue and Simcoe Street is also only 42 metres long. Southbound left turns at this intersection may increase, resulting in congestion and delays experienced by westbound motorists and TTC streetcars on Queen Street West. In this regard, follow-up studies may need to be conducted at Queen Street West and Simcoe Street, which may include prohibiting westbound left-turns during certain times of the day.

Comments on the proposed installation of traffic control signals at this intersection have been requested from the TTC but have not been received.

Councillor Joe Cressy has been advised of the recommendations of this staff report.

## **CONTACT**

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## **SIGNATURE**

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Dave Twaddle, C.E.T.  
Acting Director, Transportation Services  
Toronto and East York District

## **ATTACHMENTS**

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1. Drawing No. 421G-2406, dated February 2017

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