

Pedestrian Crossing Protection - Queen Street East and George Street

Date: May 24, 2024

To: Toronto and East York Community Council

From: Director, Traffic Management, Transportation Services

Wards: Ward 13, Toronto Centre

SUMMARY

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

Transportation Services has reviewed the need for pedestrian crossing protection at Queen Street East and George Street. Based on the assessment undertaken, Transportation Services is recommending the installation of traffic control signals at Queen Street East and George Street. The traffic control signals will provide enhanced safety for vulnerable road users.

RECOMMENDATIONS

The Director, Traffic Management, Transportation Services recommends that:

1. City Council authorize the installation of traffic control signals at the intersection of Queen Street East and George Street.

FINANCIAL IMPACT

The estimated cost for installing traffic control signals at Queen Street East and George Street is \$250,000.00. Funding would be subject to availability and competing priorities within the Transportation Services 2024 Capital Budget.

DECISION HISTORY

This report addresses a new initiative.

COMMENTS

Transportation Services was requested by a local resident through 311 to review the need for pedestrian crossing protection on Queen Street East at George Street.

Existing Conditions

Queen Street East is characterized by the following conditions:

- It is a four-lane, east-west, major arterial roadway with streetcar tracks operating in a shared right-of-way in the median lanes
- It operates two-way traffic on a pavement width of approximately 13 metres
- The daily two-way traffic volume is approximately 9,800 vehicles
- The speed limit is 40 km/h
- Heavy trucks are permitted at all times
- There is TTC service provided by the 501 Queen streetcar, no transit stops are provided at this intersection
- There are sidewalks located on both sides of the street

George Street is characterized by the following conditions:

- It is a two-lane, north-south, local roadway
- It operates two-way traffic on a pavement width of approximately 10 metres
- The daily two-way traffic volume is approximately 1,100 vehicles
- The speed limit is 30 km/h
- Heavy trucks are permitted at all times
- There is no TTC service provided
- There are sidewalks located on both sides of the street

Both roadways intersect forming a "T" type intersection. East/west traffic on Queen Street East is free-flow and northbound traffic on George Street is stop-controlled. There is a private driveway on the north side of the intersection that services the Moss Park Armoury.

The adjacent land use in this area is a mix of park, business, commercial and institutional. Both Moss Park and the Moss Park Armoury are located on the north side of Queen Street East, opposite of George Street. There is a trail in Moss Park that provides a path for pedestrians and cyclists travelling between Queen Street East and Shuter Street in the vicinity of George Street.

The closest adjacent traffic controls are located approximately 80 metres to the west, at Jarvis Street in the form of traffic control signals and approximately 200 metres to the east, at Sherbourne Street in the form of traffic control signals.

A map of the area is shown in Attachment 2.

Transportation Services has reviewed the need for either a PXO or traffic control signals at this location to determine if either device should be recommended as an appropriate pedestrian crossing protection.

Pedestrian Crossover (PXO)

To determine the need for a PXO at Queen Street East and George Street, staff rely on the justification criteria as outlined in the Ontario Traffic Manual (OTM) Book 12. The OTM justification criteria includes two main factors: the volume of vehicles and pedestrians; and pedestrian delay to cross traffic. Based on the traffic volume on Queen Street East, the warrants require a minimum of 363 pedestrians crossing over eight hours. Also, based on the pedestrian crossing volume, at least 75 pedestrians must be delayed more than 10 seconds.

An eight-hour pedestrian volume and delay study was conducted on October 18, 2022 which recorded the total volume and delays of pedestrians crossing at Queen Street East and George Street. Seniors, unassisted children, and people with disabilities that are observed crossing are given a higher weighting by a factor of two. The adjusted volume of pedestrians observed crossing was 431; of these, 189 experienced a delay greater than 10 seconds. The compliance level of the study results in relation to the warrant criteria is shown in Table 1 below.

Table 1: Pedestrian Crossover Warrant Criteria and Compliance at Queen Street East and George Street

Justification	Compliance
Pedestrian Volume	100 percent
Pedestrian Delay	100 percent

In order to meet the warrant criteria, 100 percent compliance is required in both categories. Based on the results of the study, a PXO is technically justified as both the pedestrian volume and delays have met the minimum requirements.

Staff also reviewed the collision history at this location. Collision statistics provided by the Toronto Police Service for the three-year period ending March 31, 2024, disclosed no collisions at the intersection of Queen Street East and George Street that involved crossing pedestrians.

Environmental safety characteristics were also evaluated to ensure that the installation of a PXO would be appropriate at this location. Details of the evaluation are included in Attachment 1. Based on the evaluation, a PXO would not be a suitable type of pedestrian crossing protection at this location because of the substandard spacing to adjacent traffic controls, a driveway nearby and moderate volumes of turning movements. Therefore, traffic control signals would be a more suitable traffic control at this location rather than a PXO.

Traffic Control Signals

To determine the need for traffic control signals at the intersection of Queen Street East and George Street, staff rely on justification criteria as outlined in the OTM Book 12.

The OTM justification criteria includes factors such as volume of vehicles and pedestrians, delay to cross traffic, and collision history. In addition to these technical justifications, staff consider an environmental checklist which includes consideration of road width, posted speed limit, operating speeds, adjacent land uses, pedestrian desire lines and demographics, presence of a transit stop, sight lines, and distance between existing crossing opportunities.

Staff conducted vehicle and pedestrian counts on October 18, 2022, at the subject intersection. Collision history provided by the Toronto Police Service for the three-year period ending March 31, 2024, disclosed one collision at the subject intersection that was potentially preventable by the installation of traffic control signals. This collision involved a cyclist crossing Queen Street East. The results of the counts and collision hazard are summarized in Table 2. The "Collision hazard" criterion is based on the number of collisions potentially preventable by the installation of traffic control signals.

Table 2: Warrant Compliance - Queen Street East and George Street

Justification	Compliance level
Minimum vehicular volume	30%
Delay to cross traffic (pedestrians and vehicles)	71%
Collision hazard	7%

To meet the technical justification criteria for the installation of traffic control signals, one of the justifications must be 100 percent satisfied or both the minimum vehicular volume and delay to cross traffic justifications must be at least 80 percent satisfied. Based on the results in Table 2, the installation of traffic control signals is not justified.

Regarding the environmental checklist, staff noted the following environmental factors:

- the pedestrian generators in the immediate area, including vulnerable street users crossing the roadway destined to/from Moss Park
- the four-lane cross-section on Queen Street East, as well as the volume of traffic using this street
- the continuous desire line of protected crossing that will be provided for north-south pedestrians and cyclists on George Street. A traffic control signal at Queen Street East and George Street will complement the existing controlled crossings to the south and north. To the south, there are existing traffic control signals located on George Street at Richmond Street East, at Adelaide Street East, at King Street East, at Front Street East and at The Esplanade. To the north (through Moss Park), there are existing PXO's located on George Street at Shuter Street and at Dundas Street East

In considering the above environmental factors, Transportation Services recommends the installation of traffic control signals at Queen Street East and George Street as it will provide enhanced safety for all road users.

The TTC has been advised of the study results and recommendations. TTC provided comments that a PXO is not appropriate at this location and traffic control signals can be better coordinated with other closely spaced signalized intersection at Jarvis Street.

Other Considerations

It should also be noted that the installation of traffic control signals at Queen Street East and George Street will result in the following impacts:

- There will be a loss of approximately six paid parking spaces on Queen Street East and four paid parking spaces on George Street associated with the installation of traffic control signals at this intersection
- There is potential for increase in delays to transit service on Queen Street East

The Ward Councillor has been advised of the recommendation in this report.

CONTACT

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SIGNATURE



for

Roger Browne, M.A.Sc., P. Eng.
Director, Traffic Management, Transportation Services

ATTACHMENTS

Attachment 1: Environmental Safety Audit - PXO - Queen Street East and George Street

Attachment 2: Map - Traffic Control Signals - Queen Street East and George Street

Attachment 1: Environmental Safety Audit - PXO - Queen Street East and George Street

Standard	Comments	Standard Met/Not Met
Vehicle operating speed less than 60 km/h	The posted speed limit on Queen Street East is 40 km/h.	Met
Not more than four lanes wide on a two-way street or more than three lanes wide on a one-way street	Queen Street East operates with two lanes in each direction.	Met
Traffic volume not more than 35,000 vehicles per day	Queen Street East carries approximately 9,800 vehicles per day.	Met
No significant volume of turning movements	The volume of traffic turning to/from Queen Street East is moderate (approx. 945 vehicles over busiest eight hours).	Not Met
No visibility problems exist for either pedestrians or motorists	No vertical or horizontal curves.	Met
No loading zones (including TTC) in the immediate area	There are no TTC stops located at this location.	Met
No driveways or entrances nearby	There is a driveway on the north side of this intersection.	Not Met
Spacing is not less than 200 metres to another pedestrian crossover or traffic control signal	Jarvis St (TCS) - 80 metres east Sherbourne St (TCS) - 200 metres east	Not Met

Attachment 2: Map - Traffic Control Signals - Queen Street East and George Street

