

Pedestrian Crossing Protection - Front Street East and Scott Street

Date: March 14, 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 Front Street East, City Council approval of this report is required.

Transportation Services has reviewed the need for pedestrian crossing protection at the intersection of Front Street East and Scott Street. Based on the assessment undertaken, Transportation Services is recommending the installation of traffic control signals at this intersection as the warrant criteria was met. Traffic signals will enhance safety for all road users and are justified based on the assessment undertaken.

RECOMMENDATIONS

The Director, Traffic Management, Transportation Services recommends that:

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

FINANCIAL IMPACT

The estimated cost for installing traffic control signals at the intersection of Front Street East and Scott 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 staff was requested by the previous Ward Councillor, on behalf of area residents, to review the need for pedestrian crossing protection on Front Street East at Scott Street to address pedestrian safety concerns.

Existing Conditions

Front Street East is characterized by the following conditions:

- It is a three-lane, east-west, minor arterial roadway
- It operates one-way eastbound traffic on a pavement width of approximately 11.5 metres
- The daily one-way traffic volume is approximately 6,800 vehicles
- The speed limit is 40 km/h
- Heavy trucks are permitted at all times
- There is TTC service provided by the 121 Esplanade-River bus
- There are sidewalks located on both sides of the street

Scott Street is characterized by the following conditions:

- It is a two-lane, north-south roadway
- It is classified as a collector roadway on a pavement width of approximately 6.8 metres, north of Front Street East
- It is classified as a local roadway on a pavement width of approximately 11.4 metres, south of Front Street East
- The daily two-way traffic volume is approximately 2,400 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

Eastbound traffic on Front Street East is free-flow and north-south traffic on Scott Street is stop controlled.

The adjacent land use in this area is a mix of business, commercial and a park. This intersection has Berczy Park located at its northeast corner, St. Lawrence Centre for the Arts at its southeast corner, and Meridian Hall at its southwest corner.

The closest adjacent traffic controls to Front Street East and Scott Street are located as follows:

- approximately 115 metres to the west, at Yonge Street in the form of traffic control signals
- approximately 190 metres to the east, at Church Street in the form of traffic control signals
- approximately 75 metres to the north, at Wellington Street East in the form of traffic control signals
- approximately 120 metres to the south, at The Esplanade in the form of all-way stop sign control

A map of the area is shown in Attachment 2.

Transportation Services has reviewed the need for either a pedestrian crossover (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 the intersection of Front Street East and Scott 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 Front Street East, the warrants require a minimum of 658 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 July 19, 2022, which recorded the total volume and delays of pedestrians crossing at Front Street East at Scott 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 1,169; of these, 458 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 Front Street East and Scott 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 December 31, 2023, disclosed one collision at the area of Front Street East and Scott Street that involved a crossing pedestrian.

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 given the significant volume of turning movements, driveway located in the vicinity and substandard spacing to traffic controls. Therefore, traffic control signals were investigated as a more suitable control at this location rather than a PXO.

Traffic Control Signals

To determine the need for traffic control signals at the intersection of Front Street East and Scott Street, staff rely on the justification criteria as outlined in the Ontario Traffic Manual (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.

As part of the investigation, staff conducted vehicle and pedestrian counts on November 4, 2021, at the subject intersection. The results of the counts and collision hazard are summarized in Table 2 below. The "Collision hazard" criterion is based on the number of collisions potentially preventable by the installation of traffic control signals. Collision history provided by the Toronto Police Service for the three-year period ending December 31, 2023, disclosed two collisions at the subject intersection that were potentially preventable by the installation of traffic control signals.

Table 2: Warrant Compliance - Front Street East and Scott Street

| Justification | Compliance level |
|---|-------------------------|
| Minimum vehicular volume | 58% |
| Delay to cross traffic (pedestrians and vehicles) | 43% |
| Collision hazard | 13% |

To meet the justification criteria for the installation of traffic control signals, one of the justifications must be 100 percent satisfied or two of the three justifications must be at least 80 percent satisfied. Based on the technical warrant criteria, the installation of traffic control signals is not justified.

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

- the high number of pedestrian generators in the immediate area, including a park, shops, restaurants, an art centre and theater which will attract vulnerable pedestrians to cross the street
- the intersections to the north (Wellington Street East) and the south (The Esplanade) have controls, therefore a controlled crossing at Front Street East will provide for a continuous connection for north-south pedestrians in the area
- Future developments in the area, particularly on Scott Street, that will increase pedestrian activity

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

The TTC has been advised of the study results and recommendations but has not yet provided comments.

Of note, there have been preliminary discussions through development reviews of possible geometric modifications to Scott Street, south of Front Street East. These potential changes will not preclude the installation of a traffic control signal at this intersection. The traffic control signal will provide a safe linear connection and crossing point for pedestrians destined to/from this area.

Other Considerations

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

- Loss of Parking spaces. There will be a loss of approximately four paid parking spaces on Front Street East, two paid parking spaces and two 11-metre motorcycle parking zones on Scott Street, associated with the installation of traffic control signals at this intersection. The estimated annual loss of revenue resulting from the loss of pay-and-display parking spaces will be approximately \$32,000.00.
- Delays to transit. There is potential for increase in delays to transit service on Front Street East.
- Increased queuing. The short spacing to the traffic control signals at Front Street East and Scott Street and the adjacent traffic control signals is a potential concern with regards to queue storage. Traffic signals that are located very close together (less than 150 metres), often require settings that manage queues. During the design stage, consideration will be given to strategies to minimize queue backup. This may need to be further reviewed if problems are reported after the traffic control signals are activated.

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

CONTACT

Dan Clement, CET, Manager Traffic Operations (Area 1), Transportation Services
416-397-5021 Dan.Clement@toronto.ca

SIGNATURE

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

ATTACHMENTS

Attachment 1: Environmental Safety Audit - PXO - Front Street East and Scott Street
Attachment 2: Map - Traffic Control Signals - Front Street East and Scott Street

Attachment 1: Environmental Safety Audit - PXO - Front Street East and Scott Street

| Standard | Comments | Standard Met/Not Met |
|---|---|-----------------------------|
| Vehicle operating speed less than 60 km/h | The posted speed limit on Front 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 | Front Street East operates one-way with three lanes. | Met |
| Traffic volume not more than 35,000 vehicles per day | Front Street East carries approximately 6,800 vehicles per day. | Met |
| No significant volume of turning movements | The volume of traffic turning to/from Front Street East is moderate (approx. 1,250 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 | No TTC stops are located on Front Street East at Scott Street | Met |
| No driveways or entrances nearby | There is a driveway on the south side of Front Street East, just west of Scott Street | Not Met |
| Spacing is not less than 200 metres to another pedestrian crossover or traffic control signal | Yonge St (TCS) - 115 metres east Church St (TCS) - 190 metres west | Not Met |

Attachment 2: Map - Traffic Control Signals - Front Street East and Scott Street

