

Traffic Control Signals - Eastern Avenue and Booth Avenue

Date: March 14, 2024

To: Toronto and East York Community Council

From: Director, Traffic Management, Transportation Services

Wards: Ward 14, Danforth-Toronto

SUMMARY

This staff report is about a matter that Community Council has delegated authority from City Council to make a final decision.

Transportation Services has reviewed the need for traffic control signals at the intersection of Eastern Avenue and Booth Avenue. Based on the assessment undertaken, Transportation Services recommend 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. Toronto and East York Community Council authorize the installation of traffic control signals at the intersection of Eastern Avenue and Booth Avenue.

FINANCIAL IMPACT

The estimated cost for installing traffic control signals at the intersection of Eastern Avenue and Booth Avenue is \$210,000.00. 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 through 311 to investigate the feasibility of installing traffic control signals at the intersection of Eastern Avenue and Booth Avenue.

Existing Conditions

Eastern Avenue is characterized by the following conditions:

- It is a four-lane, east-west, major arterial roadway
- It operates two-way traffic on a pavement width of approximately 12.8 metres
- The daily two-way traffic volume is approximately 20,000 vehicles
- The speed limit is 40 km/h
- There is no Toronto Transit Commission (TTC) service provided
- There are sidewalks located on both sides of the street

Booth Avenue is characterized by the following conditions:

- It is a two-lane, north-south, local roadway
- North of Eastern Avenue, it operates one-way southbound traffic on a pavement width of approximately 6.5 metres, while south of Eastern Avenue it operates two-way traffic on a pavement width of approximately 9.6 metres
- The daily one-way traffic volume north of Eastern Avenue is approximately 500 vehicles and south of Eastern Avenue is 3,500 vehicles
- The speed limit is 30 km/h
- Heavy trucks are prohibited at all times, north of Eastern Avenue
- There is no TTC service provided
- There are sidewalks located on both sides of the street

Eastern Avenue and Booth Avenue form a four-leg intersection. Booth Avenue is stop controlled while Eastern Avenue is free-flow.

The adjacent land use in this area is a mix of residential and commercial. It should also be noted that in recent years a multi-unit residential development has been constructed on the north side of Eastern Avenue, between Booth Avenue and Logan Avenue.

The closest adjacent traffic controls on Eastern Avenue are located approximately 90 metres to the east, at Logan Avenue and approximately 540 metres to the west, at Broadview Avenue in the form of a traffic control signals.

A map of the area is included in Attachment 1.

Traffic Control Signals

To determine the need for traffic control signals at the intersection of Eastern Avenue and Booth Avenue, 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 February 12, 2020 at the subject intersection. The results of the counts and collision hazard are summarized in Table 1 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 January 1, 2023 disclosed 21 reported collisions at the subject intersection. Sixteen of these collisions were considered potentially preventable by the installation of traffic control signals.

Table 1: Warrant Compliance - Eastern Avenue and Booth Avenue

Justification	Compliance level
Minimum vehicle volume	86%
Delay to cross traffic (pedestrians and vehicles)	93%
Collision hazard	100%

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 justified.

In regard to the environmental checklist, staff completed an assessment and determined that the proposed traffic control signals at the intersection of Eastern Avenue and Booth Avenue and the existing traffic control signals at Logan Avenue will be closely spaced (less than 100 metres).

Accordingly, Transportation Services considered having the new traffic control signals more centrally located on Eastern Avenue; the intersections of McGee Street and Empire Avenue were also considered. McGee Street is one-way southbound and offset from a driveway on the south side of Eastern Avenue. Empire Avenue is one-way northbound. Both streets form "T" type intersections with Eastern Avenue. Considering the configurations, driveways, and entrances nearby and the most recent traffic data, the intersection of Booth Avenue is the optimal location for traffic control signals as it provides the greatest benefits and strongest desire lines of travel for all road users in this section of Eastern Avenue.

There are no other environmental or external factors that would preclude the intersection of Booth Avenue and Eastern Avenue from the installation of traffic control signals at this time.

Transportation Services recommend the installation of traffic control signals as they are justified based on the technical and environmental criteria that was evaluated.

Other Considerations

Installation of traffic control signals at the intersection of Eastern Avenue and Booth Avenue can cause impact as follows:

- Delays to traffic on Eastern Avenue: There will be an increase in delays to motorists on Eastern Avenue as a result of the traffic control signal installation.
- Increased queuing: The short spacing to the traffic control signals at Eastern Avenue and Booth Avenue and existing traffic control signals at Eastern Avenue and Logan Avenue 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.
- Loss of Parking spaces. The installation of traffic control signals would result in the loss of about four on-street parking spaces on Booth Avenue, north of Eastern Avenue.
- Infiltration: There may be an increase in traffic on Booth Avenue.

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

CONTACT

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SIGNATURE

Roger Browne, M.A.Sc., P. Eng.
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ATTACHMENTS

Attachment 1: Map - Traffic Control Signals - Eastern Avenue and Booth Avenue

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