

## **Pedestrian Crossing Protection - North Queen Street and Medulla Avenue/Private Access**

**Date:** September 27, 2023

**To:** Etobicoke York Community Council

**From:** Director, Traffic Management, Transportation Services

**Wards:** Ward 3 - Etobicoke-Lakeshore

### **SUMMARY**

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

Transportation Services has reviewed the need for pedestrian crossing protection on North Queen Street, in the area near Medulla Avenue. Based on the assessment undertaken, Transportation Services is requesting approval to install traffic control signals at the intersection of North Queen Street and Medulla Avenue/Private Access. Traffic control signals will provide enhanced safety for vulnerable road users.

### **RECOMMENDATIONS**

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The Director, Traffic Management, Transportation Services recommends that:

1. City Council authorize the installation of traffic control signals at the intersection of North Queen Street and Medulla Avenue/Private Access.

### **FINANCIAL IMPACT**

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The estimated cost for installing traffic control signals at the intersection of North Queen Street at Medulla Avenue/Private Access is \$250,000. Funding would be subject to availability and competing priorities within the Transportation Services 2024 Capital Budget.

### **DECISION HISTORY**

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This report addresses a new initiative.

## COMMENTS

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Transportation Services was requested by the Ward Councillor, on behalf of pedestrians and transit users, to review the need for pedestrian crossing protection near the intersection of North Queen Street and Medulla Avenue. This request is to address the long distance between protected pedestrian crossings on North Queen Street which is approximately 750 metres and enhance safety for pedestrians and transit users.

### Existing Conditions

North Queen Street 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 16.5 metres
- The daily two-way traffic volume is approximately 15,400 vehicles
- The speed limit is 60 km/h
- There is TTC service provided by the 123 Sherway bus route
- Heavy trucks are permitted at all times
- There are sidewalks located on both sides of the street

Medulla Avenue 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 12.6 metres
- The speed limit is 50 km/h
- Heavy trucks are permitted at all times
- There is no TTC service provided
- There is a sidewalk located on the west side of Medulla Avenue

North Queen Street and Medulla Avenue/Private Access is a three-leg intersection with a private commercial driveway access opposite Medulla Avenue that will comprise the fourth leg of the intersection. Medulla Avenue is stop sign controlled while North Queen Street is free flow. The private access is currently not signed but motorists are required to stop before crossing the municipal sidewalk and yield to other vehicles before entering the roadway.

The adjacent land use in this area is commercial. There are near side eastbound and westbound bus stops approaching the subject intersection.

The closest adjacent traffic control signals are located approximately 400 metres to the east at Shorncliffe Road and approximately 340 metres to the west at The East Mall. Between these two signalized intersections, there is no pedestrian crossing protection provided on North Queen Street.

A map of the area is included in Attachment 2.

Transportation Services has reviewed the need for either a pedestrian crossover 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 North Queen Street near Medulla Avenue, staff rely on the justification criteria as outlined in the Ontario Traffic Manual (OTM) Book 15. 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 North Queen Street, the warrants require a minimum crossing volume of 200 pedestrians over eight hours. Also, based on the pedestrian crossing volume, at least 120 pedestrians must be delayed for more than 10 seconds.

An eight-hour pedestrian volume and delay study were conducted on October 10, 2019, which recorded the total volume and delays of pedestrians crossing at North Queen Street in the vicinity of Medulla Avenue/Private Access. Seniors, unassisted children and people with disabilities that are observed crossing are given a higher weighting by a factor of two. However, in this case all crossing were recorded as youth/adults. The adjusted volume of pedestrians observed crossing was 38; of these, 22 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 North Queen Street and Medulla Avenue/Private Access

<b>Justification</b>	<b>Compliance</b>
Pedestrian Volume	19 percent
Pedestrian Delay	18 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 not justified as both the pedestrian volume and delays have not met the minimum requirements.

In addition to the technical criteria, consideration of the surrounding area is given and in some cases engineering judgement may be applied to recommend a PXO even if the number of pedestrians do not meet the threshold of the technical warrants. Due to the long distance between protected crossings and presence of bus stops, Transportation Services is recommending the installation of pedestrian crossing protection at the intersection of a North Queen Street and Medulla Avenue/Private Access.

Environmental safety characteristics were 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, as the vehicle operating speed exceeds the recommended maximums. Therefore, suitability of traffic control signals at this location were considered.

## Traffic Control Signals

To determine the need for traffic control signals at the intersection of North Queen Street and Medulla Avenue, staff rely on the 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 June 20, 2023, at the subject intersection. The results of this study recorded a total of 73 pedestrians crossing North Queen Street at Medulla Avenue. Collision history provided by the Toronto Police Service for the three-year period ending December 31, 2022, disclosed two collisions were reported at the subject intersection that were potentially preventable by the installation of traffic control signals. One of these collisions at the intersection involved a pedestrian crossing North Queen Street. 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 - North Queen Street and Medulla Avenue/Private Access

<b>Justification</b>	<b>Compliance level</b>
Minimum vehicular volume	40%
Delay to cross traffic (pedestrians and vehicles)	47%
Collision hazard	13%

To meet the technical justification criteria for the installation of traffic control signals, one of the justifications must be 100 percent satisfied or any two of the three justifications must be at least 80 percent satisfied. Based on the results in Table 2, the installation of traffic control signals is not justified.

In regards to the environmental checklist, staff noted the following environmental factors:

- the long spacing between pedestrian crossing protection on North Queen Street;
- the presence of transit stops in both directions on North Queen Street that attract pedestrians to cross the street; and
- the four-lane cross-section on, as well as the speed and volume of traffic using this street.

- The private access located on the south side of North Queen Street is slightly offset from Medulla Avenue. Our review has determined that the private access should also be included as part of the signalized intersection.

In considering the above environmental factors, Transportation Services recommends the installation of traffic control signals at the intersection of North Queen Street and Medulla Avenue/Private Access, as it will provide enhanced safety for pedestrians crossing North Queen Street.

The TTC has been advised of the study results and recommendation and have no concerns.

### **Other Considerations**

It should be noted that the installation of traffic control signals at North Queen Street and Medulla Avenue/Private Access will have the following impacts:

- There is potential for increase in delays to transit service on North Queen Street as east-west traffic will no longer operate free-flow.

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

### **CONTACT**

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Shawn Dillon, Manager Traffic Operations, (Area 2), Transportation Services  
416-394-8409, [Shawn.Dillon@toronto.ca](mailto:Shawn.Dillon@toronto.ca)

### **SIGNATURE**

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

### **ATTACHMENTS**

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Attachment 1: Environmental Safety Audit - PXO - North Queen Street and Medulla Avenue/Private Access

Attachment 2: Map - Traffic Control Signals - North Queen Street and Medulla Avenue/Private Access

Attachment 1: Environmental Safety Audit - PXO - North Queen Street and Medulla Avenue

Standard	Comments	Standard Met/Not Met
Vehicle operating speed less than 60 km/h	The 85th percentile speed on North Queen Street is above 60 km/h	Not Met
Not more than four lanes wide on a two-way street or more than three lanes wide on a one-way street	North Queen Street operates with four lanes wide on a two-way street.	Met
Traffic volume not more than 35,000 vehicles per day	North Queen Street carries approximately 15,400 vehicles per day.	Met
No significant volume of turning movements	The volume of traffic turning to/from North Queen Street is moderate. (approx. 300 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	Eastbound and westbound TTC stops are located east and west of North Queen Street and Medulla Avenue/Private Access.	Not Met
No driveways or entrances nearby	Commercial property access driveway is located in the immediate vicinity.	Not Met
Spacing is not less than 200 metres to another pedestrian crossover or traffic control signal	Shorncliffe Rd (TCS) - 400 metres east The East Mall (TCS) - 340 metres west	Met

Attachment 2: Traffic Control Signals - North Queen Street and Medulla Avenue/Private Access

