

Traffic Control Signals – Islington Avenue and Barker Avenue

Date: January 15, 2021
To: Etobicoke York Community Council
From: Acting Director, Traffic Management, Transportation Services
Wards: Ward 1 – Etobicoke North

SUMMARY

As the Toronto Transit Commission (TTC) operates bus service on Islington Avenue, City Council approval of this report is required.

Transportation Services is requesting approval to install traffic control signals at the intersection of Islington Avenue and Barker Avenue. Traffic control signals will provide enhanced safety for vulnerable road users and is justified based on the assessment undertaken.

RECOMMENDATIONS

The Acting Director, Traffic Management, Transportation Services recommends that:

1. City Council authorize the installation of traffic control signals at the intersection of Islington Avenue and Barker Avenue.

FINANCIAL IMPACT

The estimated cost for installing traffic control signals is \$180,000. Funding would be subject to availability and competing priorities within the Transportation Services 2022 Capital Budget.

DECISION HISTORY

This report addresses a new initiative.

COMMENTS

Transportation Services staff was requested by the Ward Councillor, on behalf of area residents, to review the need for pedestrian crossing protection at Islington Avenue and Barker Avenue. This request is to address the long distance between protected pedestrian crossings on Islington Avenue, which is approximately 1.2 km, and enhance safety for pedestrians and transit users using the mid-block TTC bus stops.

Existing Conditions

Islington Avenue is characterized by the following conditions:

- It is a four-lane, north-south major arterial roadway
- It operates two-way traffic on a pavement width of approximately 15 metres
- The daily two-way traffic volume is approximately 28,000 vehicles
- The posted regulatory speed limit is 50 km/h
- Heavy trucks are permitted at all times
- There is TTC service provided by the Islington Avenue 37B bus
- Sidewalks are present on both sides of the street

Barker Avenue is characterized by the following conditions:

- It is a two-lane, east-west local roadway
- It operates two-way traffic on a pavement width of approximately 8.5 metres
- The daily two-way traffic volume is approximately 2,000 vehicles
- The posted speed limit speed limit is 40 km/h
- Heavy trucks are prohibited at all times
- There is no TTC service provided
- There are sidewalks located on the north side and partially on the south side of the street

Barker Avenue and Islington Avenue is a "T" intersection controlled by a 'stop' sign for westbound traffic.

The adjacent land use in the area is residential (single and multi-unit dwellings). There are northbound and southbound bus stops at the Islington Avenue and Barker Avenue intersection.

The closest adjacent traffic controls are located approximately 625 metres to the north at Albion Road and approximately 570 metres to the south at Fordwich Crescent, in the form of traffic control signals.

A map of the area is shown on Attachment 1.

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

To determine the need for a PXO at Islington Avenue and Barker Avenue, 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 Islington Avenue, the warrants require a minimum crossing volume of 200 pedestrians over eight hours. Also, based on the pedestrian crossing volume, at least 130 pedestrians must be delayed more than 10 seconds.

An eight-hour pedestrian volume and delay study was conducted on Tuesday, April 2, 2019, which recorded the total volume and delays of pedestrians crossing at Islington Avenue in the vicinity of Barker Avenue. 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 19; of these, 9 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 Islington Avenue and Barker Avenue

Justification	Compliance
Pedestrian Volume	19 (9 percent)
Pedestrian Delay	9 (0 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, Transportation Services undertook an environmental safety audit.

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 2. Based on the evaluation, a PXO would not be a suitable type of pedestrian crossing protection at this location because of the 85th percentile exceeding 60 km/h on Islington Avenue. Therefore, traffic control signals are considered at this location rather than a PXO.

Traffic Control Signals

To determine the need for traffic control signals at the intersection of Islington Avenue and Barker Avenue, 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.

As part of the investigation staff conducted vehicle and pedestrian counts on Tuesday, April 2, 2019, at the subject intersection. 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. Collision history provided by the Toronto Police Service for the three-year period ending December 31, 2019, disclosed five collisions at the subject intersection, however none of the collisions were considered preventable by the installation of traffic control signals

Table 2: Warrant Compliance - Islington Avenue and Barker Avenue

Justification	Compliance level
Minimum vehicular volume	24%
Delay to cross traffic (pedestrians and vehicles)	71%
Collision hazard	0%

To meet the 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 Islington Avenue;
- the presence of transit stops in both directions on Islington Avenue at Barker Avenue that attract pedestrians to cross the street;
- the pedestrian generators in the immediate area attract vulnerable pedestrians to cross the street; and

- the four lane cross-section on Islington Avenue, as well as the speed and volume of traffic using this street.

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

The TTC has been consulted and concurs with these findings and advises that the proposed installation of traffic control signals at the intersection of Islington Avenue and Barker Avenue will not impact the location of the existing two TTC bus stops at this intersection.

It should be noted that the installation of traffic control signals will result in increased delays for traffic on Islington Avenue as north-south traffic will no longer operate free flow.

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

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SIGNATURE

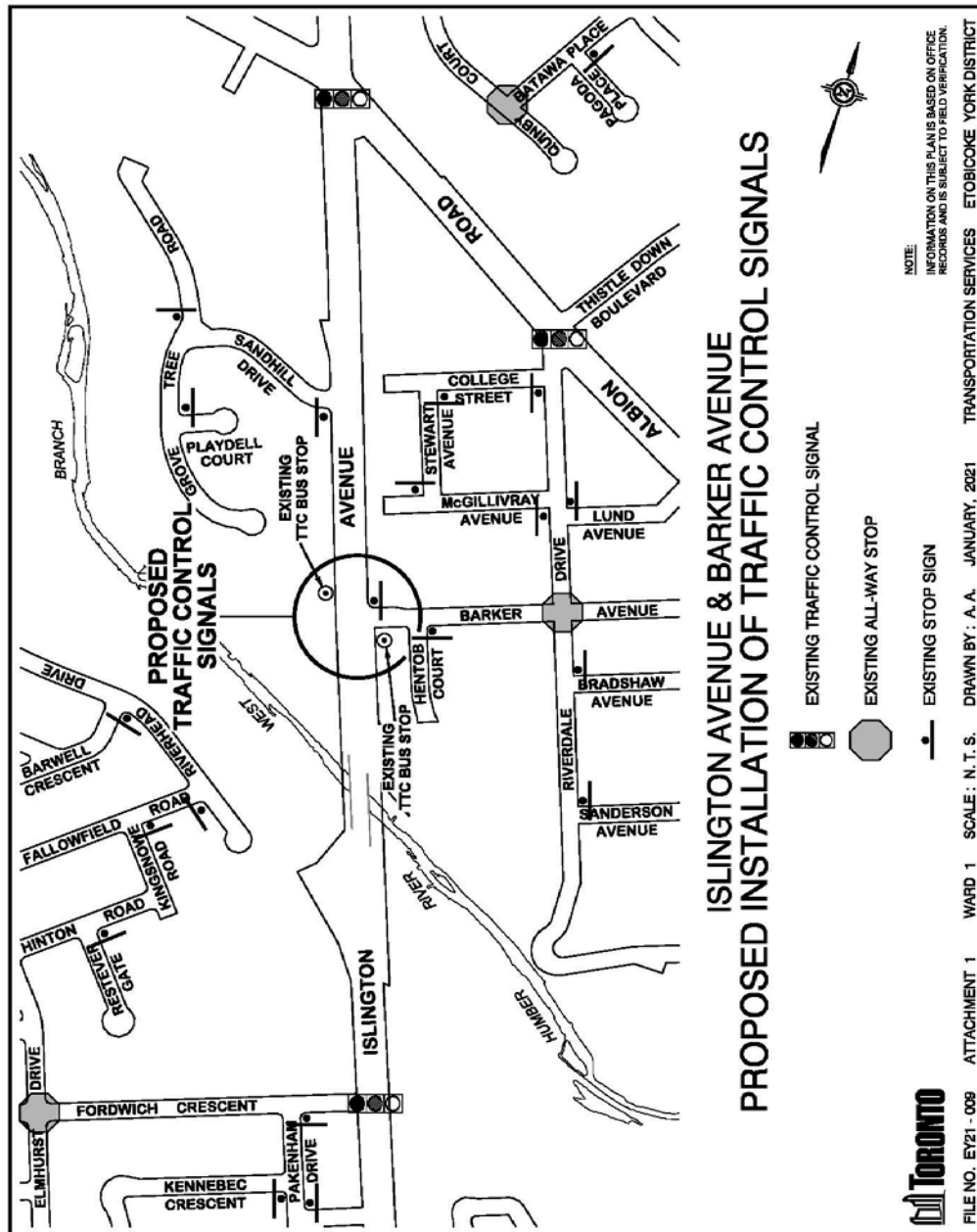
Roger Browne, M.A. Sc., P.Eng.
Acting Director, Traffic Management
Transportation Services

ATTACHMENTS

Attachment 1 - Area Map and Proposed Traffic Control Signals Islington Avenue at Barker Avenue

Attachment 2 - Environmental Safety Audit - PXO - Islington Avenue and Barker Avenue

Attachment 1 - Area Map and Proposed Traffic Control Signals at Islington Avenue and Barker Avenue



Attachment 2: Environmental Safety Audit - PXO - Islington Avenue and Barker Avenue

Standard	Comments	Standard Met/Not Met
Vehicle operating speed less than 60 km/h	The 85th percentile speed limit on Islington Avenue is 68 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	Islington Avenue operates with two lanes in each direction.	Met
Traffic volume not more than 35,000 vehicles per day	Islington Avenue carries approximately 27,000 vehicles per day.	Met
No significant volume of turning movements	The volume of traffic turning to/from is moderate (how is this known? estimate tmc# available?)	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	Northbound and southbound TTC stops north and south of Barker Avenue at Islington Avenue.	Not Met
No driveways or entrances nearby	No driveways in the immediate vicinity.	Met
Spacing is not less than 200 metres to another pedestrian crossover or traffic control signal	Albion Road (TCS) - 625 metres north Fordwich Crescent (TCS) - 570 metres south	Met