

Traffic Control Signals - McCowan Road and Big Red Avenue/Bridley Drive

Date: September 3, 2024

To: Scarborough Community Council

From: Director, Traffic Management, Transportation Services

Wards: Ward 23, Scarborough North

SUMMARY

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

Transportation Services investigated the feasibility of removing the pedestrian refuge island (PRI) on McCowan Road, approximately 50 metres north of Big Red Avenue/Bridley Drive and replacing it with traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive.

While our analysis indicates that based on the current motor vehicle volumes, delays and collisions, the installation of traffic control signals is not technically warranted, we are recommending the installation at McCowan Road and Big Red Avenue/Bridley Drive due to several factors:

- PRI's do not provide right-of-way for pedestrians and are not considered an enhanced form of pedestrian crossing protection.
- The heavy traffic on the four/five lane cross-section of McCowan Road poses potential safety concerns for pedestrians crossing at the PRI to access the TTC bus shelters located on either side of McCowan Road in the vicinity of the PRI.
- The distance between the nearest protected pedestrian crossings (traffic control signals) on McCowan Road is approximately 730 metres.

Additionally, staff recommend relocating the TTC bus shelters on both sides of McCowan Road, approximately 50 metres north of Big Red Avenue/Bridley Drive, to the intersection of McCowan Road and Big Red Avenue/Bridley Drive in conjunction with the installation of new traffic control signals and removal of the PRI.

The above recommendation will provide a safer and more convenient crossing of McCowan Avenue for all road users, including TTC passengers.

RECOMMENDATIONS

The Director, Traffic Management, Transportation Services recommends that:

1. City Council authorize the installation of traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive.
2. City Council authorize the removal of the pedestrian refuge island on McCowan Road at a point approximately 50 metres north of the intersection of McCowan Road and Big Red Avenue/Bridley Drive, in conjunction with the installation of traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive, as set out in Recommendation 1 above.

FINANCIAL IMPACT

The estimated cost for installing traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive is \$220,000.00.

The estimated cost for the removal of the PRI located on McCowan Road at a point approximately 50 metres north of the intersection of McCowan Road and Big Red Avenue/Bridley Drive is \$8,000.00.

The estimated cost of relocating the TTC bus shelters on both sides of McCowan Road, approximately 50 metres north of Big Red Avenue/Bridley Drive, to the intersection of McCowan Road and Big Red Avenue/Bridley Drive is \$40,000.00.

Funding would be subject to availability and competing priorities within the Transportation Services 2025 Capital Budget.

DECISION HISTORY

This report addresses a new initiative.

COMMENTS

In response to an enquiry from the Ward Councillor regarding the safety of pedestrians using the pedestrian refuge island due to the PRI being frequently hit by motor vehicles, Transportation Services staff reviewed the feasibility of replacing the PRI with new traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive. Furthermore, in conjunction with the removal of the PRI and installation of the new traffic control signals, staff also consulted the TTC about the feasibility of relocating the TTC bus shelters to the intersection of McCowan Road and Big Red Avenue/Bridley Drive.

The primary function of the PRI on McCowan Road, approximately 50 metres north of Big Red Avenue/Bridley Drive is to provide a crossing protection for TTC patrons as the TTC bus shelters are located on either side of McCowan Road. Therefore, with the installation of new traffic control signals at McCowan Road and Big Red Avenue/Bridley Drive and relocation of the TTC bus shelters to the new location, the PRI would be redundant.

Existing Conditions

McCowan Road is characterized by the following conditions:

- It is a four/five-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 26,000 vehicles
- The speed limit is 50 km/h
- Heavy trucks are permitted at all times
- There is TTC service provided by the 129 McCowan North bus
- There are sidewalks located on both sides of the street

Big Red 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 970 vehicles
- The speed limit is 30 km/h
- Heavy trucks are prohibited at all times
- There is no TTC service provided
- There are sidewalks located on both sides of the street

Bridley Drive 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 490 vehicles
- The speed limit is 30 km/h
- Heavy trucks are prohibited at all times
- There is no TTC service provided
- There are sidewalks located on both sides of the street

McCowan Road and Big Red Avenue/Bridley Drive form a four-leg intersection. Big Red Avenue and Bridley Drive are stop-sign controlled while McCowan Road is uncontrolled free-flow.

The adjacent land use in this area is residential comprising of detached and semi-detached homes. The pedestrian refuge island is located on McCowan Road approximately 50 metres north of Big Red Avenue/Bridley Drive.

The closest adjacent traffic controls are located approximately 300 metres to the south at Sandhurst Circle in the form of a traffic control signals and approximately 440 metres to the north at McNicoll Avenue in the form of traffic controls 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 McCowan Road and Big Red Avenue/Bridley Drive, 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 28, 2023, at the subject intersection. The results of the counts and collision hazard are summarized in Table 1. 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 June 30, 2024, disclosed two collisions at the subject intersection that were potentially preventable by the installation of traffic control signals.

The two potentially preventable collisions are described in detail below:

- September 28, 2022, at 12:30 p.m. - A vehicle making a northbound left turn came into contact with a motorist travelling southbound. The collision resulted in minor property damage and no personal injuries.
- September 14, 2023, at 12:19 p.m. - A cyclist travelling southbound on the east leg pedestrian crosswalk was struck by a vehicle making a northbound right turn. The cyclist sustained minor injuries.

Table 1: Warrant Compliance - McCowan Road and Big Red Avenue/Bridley Drive

Justification	Compliance level
Minimum vehicular volume	20%
Delay to cross traffic (pedestrians and vehicles)	24%
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 both the minimum vehicular volume and delay to cross traffic justifications must be at least 80 percent satisfied. Based on the results in Table 1, the installation of traffic control signals is not technically justified.

Notwithstanding the above, Transportation Services further considered installation of traffic control signals at the intersection for the following reasons:

- Approximately 730 metres distance between protected pedestrian crossings (traffic control signals) on McCowan Road
- Four/five lane cross-section and traffic volume on McCowan Road
- PRI's do not provide right-of-way for pedestrians
- PRI's are not considered an enhanced form of pedestrian crossing protection

Based on the above, Transportation Services supports the installation of traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive.

The TTC has been consulted and concurs with replacing the pedestrian refuge island on McCowan Road, approximately 50 metres north of Big Red Avenue/Bridley Drive with traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive. TTC also supports the relocation of the existing TTC bus shelters in the vicinity of the PRI to the new traffic control signals at the intersection of McCowan Road and Big Red Avenue/Bridley Drive. Relocating these TTC stops will improve pedestrian/customer safety by providing them with an enhanced protected pedestrian crossing.

Other Considerations

It should be noted that the installation of traffic control signals will have the following additional impacts:

- There will be a loss of approximately six on-street parking spaces on Big Red Avenue/Bridley Drive associated with the installation of traffic control signals at this intersection
- There is potential for an increase in delays to transit service on McCowan Road

The Ward Councillor has been advised of the recommendations 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: Map - Traffic Control Signals - McCowan Road and Big Red Avenue/Bridley Drive

Attachment 1: Map - Traffic Control Signals - McCowan Road and Bridley Drive/Big Red Avenue

