

Traffic Control Signal - Trethewey Drive and Paulson Road

Date: August 23, 2021

To: Etobicoke York Community Council

From: Acting Director, Traffic Management, Transportation Services

Wards: Ward 5 - York South-Weston

SUMMARY

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

Transportation Services has reviewed the need for pedestrian crossing protection /on Trethewey Drive near Paulson Road. Based on the assessment undertaken, Transportation Services is requesting approval to install traffic control signals at the intersection of Trethewey Drive and Paulson Road. Traffic control signals will provide enhanced safety for vulnerable road users and is justified based on the Vision Zero 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 Trethewey Drive and Paulson Road.

FINANCIAL IMPACT

The estimated cost for installing traffic control signals at the intersection of Trethewey Drive and Paulson Road 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 was requested by the Ward Councillor, on behalf of local residents, to review the need for pedestrian crossing protection at the intersection of Trethewey Drive and Paulson Road. This request is to address the long distance between protected pedestrian crossings on Trethewey Drive which is approximately 324 metres to the east at Trethewey Drive and Clearview Heights (east intersection) and approximately 350 metres to the west at Trethewey Drive and Black Creek Drive, and enhance safety for pedestrians and transit users. .

Existing Conditions

Trethewey Drive is characterized by the following conditions:

- It is a five-lane, east-west, minor arterial roadway
- It operates two-way traffic on a pavement width of approximately 17 metres
- The daily two-way traffic volume is approximately 16,000 vehicles
- The posted regulatory speed limit is 40 km/h
- There is TTC service provided by the 32 Eglinton East and 32C Eglinton West bus routes
- Heavy trucks are prohibited at all times
- There are sidewalks located on both sides of the street

Paulson Road 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 8.5 metres
- The daily two-way traffic volume is approximately 100 vehicles
- The posted regulatory speed limit is 40 km/h
- Heavy trucks are prohibited at all times
- There is no TTC service provided
- There are no sidewalks on the street

Trethewey Drive and Paulson Road is a "T" intersection. Paulson Road is stop sign controlled while Trethewey Drive is free-flow. Eastbound left turns from Trethewey Drive to Paulson Road are prohibited between 6:30 a.m. and 9:30 a.m., and 3:30 p.m. to 6:30 p.m., Monday to Friday (to be maintained).

The adjacent land use in this area is residential (single and multi-unit dwellings). There are eastbound and westbound bus stop/shelters at the intersection.

The closest adjacent traffic control signals are located approximately 324 metres to the east at Clearview Heights and approximately 350 metres to the west at Black Creek Drive. Between these two signalized intersections, there is no pedestrian crossing protection provided on Trethewey Drive.

A map of the area is included in Attachment 1.

Transportation Services has reviewed the need for either a 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 Trethewey Drive and Paulson Road, 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 Trethewey Drive, the warrants require a minimum crossing volume of 259 pedestrians over eight hours. Also, based on the pedestrian crossing, at least 97 pedestrians must be delayed for more than 10 seconds.

An eight-hour pedestrian volume and delay study was conducted on Thursday, February 6, 2020, which recorded the total volume and delays of pedestrians crossing at Trethewey Drive in the vicinity of Paulson Road. 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 31; 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 Trethewey Drive and Paulson Road

Justification	Compliance
Pedestrian Volume	31 (12 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 Trethewey Drive in addition to the existing number of lanes which exceeds 4 lanes. 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 Trethewey Drive and Paulson Road, 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 Thursday, February 6, 2020 at the subject intersection. Collision history provided by the Toronto Police Service for the three-year period ending December 31, 2020 disclosed no collision at the subject intersection that was potentially preventable by the installation of traffic control signals. No collisions at the intersection involved pedestrians. 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.

Table 2: Warrant Compliance - Trethewey Drive and Paulson Road

Justification	Compliance level
Minimum vehicular volume	3%
Delay to cross traffic (pedestrians and vehicles)	11%
Collision hazard	0%

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 1, 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 Trethewey Drive;
- the presence of transit stops in both directions on Trethewey Drive that attract pedestrians to cross the street;
- the pedestrian generator in the immediate area, including multi-unit dwellings, that attract vulnerable pedestrians to cross the street; and

- the five lane cross-section on Trethewey Drive, 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 the intersection of Trethewey Drive and Paulson Road as it will provide enhanced safety for all road users.

During the initial consultation with TTC staff, they had indicated that the suitable location for traffic control signals would be approximately 30 metres east of Paulson Road, however upon review with Transportation Services staff and conversations with the Ward Councillor it was determined that signal installation would be best suited at the intersection of the Trethewey Drive and Paulson Road due to the presence of private driveways on either side of Trethewey Drive.

The TTC has been advised why relocating midblock signals approximately 30 metres east of Paulson Road is not feasible. The TTC has not provided any further comments.

Other Considerations

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

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

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

CONTACT

Bruce Clayton, Manager Traffic Operations (Area 2), Transportation Services, 416-394-8409, Bruce.Clayton@toronto.ca

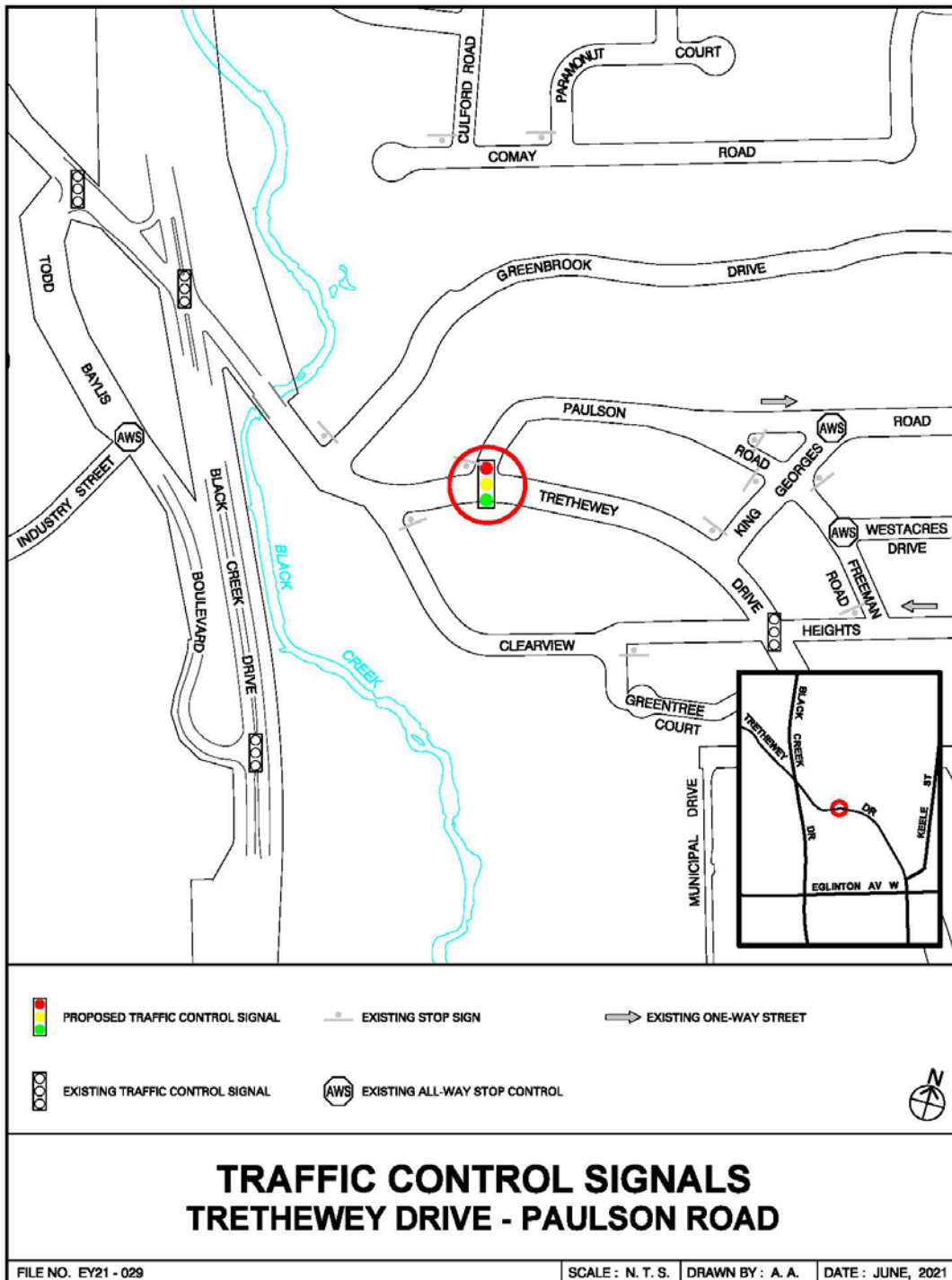
SIGNATURE

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

ATTACHMENTS

Attachment 1: Map - Traffic Control Signals - Trethewey Drive and Paulson Road

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Attachment 2: Environmental Safety Audit - PXO - Trethewey Drive and Paulson Road

Standard	Comments	Standard Met/Not Met
Vehicle operating speed less than 60 km/h	The 85th percentile speed limit on Trethewey Drive is 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	Trethewey Drive operates with five lanes in each direction.	Not Met
Traffic volume not more than 35,000 vehicles per day	Trethewey Drive carries approximately 15,884 vehicles per day.	Met
No significant volume of turning movements	The volume of traffic turning to/from Trethewey Drive is moderate (approx. 3,716 vehicles over the busiest 8 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 east and west of Paulson Road at Trethewey Drive.	Not Met
No driveways or entrances nearby	Driveways located in the immediate vicinity.	Not Met
Spacing is not less than 200 metres to another pedestrian crossover or traffic control signal	Clearview Heights (TCS) - 324 metres east, Black Creek Drive (TCS) - 350 metres west	Met