Traffic Control Signals - Danforth Road at Seminoff Street

Date: January 16, 2020
To: Scarborough Community Council
From: Acting Director, Traffic Management, Transportation Services
Wards: Ward 20 – Scarborough Southwest

SUMMARY

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

Transportation Services staff has reviewed the feasibility of installing traffic control signals or a pedestrian crossover (PXO) on Danforth Road at Seminoff Street.

The installation of a PXO is justified, however, based on the safety audit of this location, the environmental suitability for a PXO was not satisfied, given that the operating speed is equal to or greater than 60 km/h on Danforth Road. As an alternative, installing traffic control signals at this location would provide a safe and convenient access for pedestrians crossing Danforth Road.

This report recommends that the installation of traffic control signals be authorized at the intersection of Danforth Road and Seminoff Street, as the existing conditions do meet the warrant for the pedestrian crossing protection and are supported under traffic engineering judgment.

RECOMMENDATIONS

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

1. City Council authorize the installation of traffic control signals at the intersection of Danforth Road and Seminoff Street.
FINANCIAL IMPACT

The estimated cost of installing traffic control signals at Danforth Road and Seminoff Street is approximately $200,000. This installation will be considered in 2021, subject to availability of funding and competing priorities.

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 feasibility of installing traffic control signals or a PXO at Danforth Road and Seminoff Street.

Existing Conditions

Danforth Road is classified as minor arterial road, and operates two-way north-south, with a posted speed limit of 60 km/h. However, it should be noted, at its meeting on December 3, 2019, Scarborough Community Council adopted a speed limit reduction on Danforth Road, between Danforth Avenue and St. Clair Avenue East (SC11.8) to 50 km/h. Signs reflecting the speed limit reduction will be installed in the near future based on available funds and competing priorities. Sidewalks are located on both sides of the street. At the intersection, there are two lanes of travel in each direction, as well as a centre left turn lane for northbound motorists.

Seminoff Street is classified as a local road, and operates two-way east-west, with a regulatory speed limit of 50 km/h, and sidewalks are located on the north side of the street.

The intersection of Danforth Road and Seminoff Street forms a "T" type intersection. Northbound and southbound traffic on Danforth Road is free-flow. As Danforth Road is designated as a through highway, eastbound traffic on Seminoff Street is stop-controlled at Danforth Road. Adjacent traffic control signals are located approximately 205 metres to the north at Danforth Road and Pilkington Drive, and approximately 330 metres to the south at Danforth Road and Mack Avenue.

The TTC operates the "113 Danforth" bus service on Danforth Road, and there are northbound and southbound TTC bus stops near the intersection. The land use in this area is a mix of residential, business, commercial and a mosque.
Analysis

Traffic Control Signal Justification Study

Using traffic volumes recorded during the peak eight hours on Friday, May 10, 2019, the following results were obtained:

<table>
<thead>
<tr>
<th>Traffic Control Signal Warrant</th>
<th>Compliance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Vehicular Volume</td>
<td>17%</td>
</tr>
<tr>
<td>Delay To Cross Traffic</td>
<td>28%</td>
</tr>
<tr>
<td>Collision Hazard</td>
<td>7%</td>
</tr>
</tbody>
</table>

In order to meet the warrant for Traffic Control Signals, one of the “Minimum Vehicular Volume” or “Delay to Cross Traffic” or "Collision Hazard" warrants must be 100 percent satisfied, or both the “Minimum Vehicular Volume” and “Delay to Cross Traffic” warrants must be at least 80 percent satisfied. Our review of the Collision Hazard is based on the previous three-year (2016 – 2018) collision history available.

Although the warrants for traffic control signals at the intersection of Danforth Road and Seminoff Road are not satisfied, the location was reviewed against the criteria in the Environmental Pedestrian Crossover Safety Audit as shown in Attachment 2. A PXO is considered environmentally suitable if the operating speed is less than 60 km/h, there are four lanes or less on a two-way street, and the traffic volume is less than or equal to 35,000 vehicles per day. Our review of the criteria found in the safety audit, indicates that a PXO is not suitable for this location, specifically because the operating speed is higher than 60 km/h. Therefore, it is recommended that traffic control signals be installed at this intersection to provide safer and controlled crossing for pedestrians.

Pedestrian Crossing Protection Study

Using traffic volumes recorded during the peak eight hours on Friday, May 10, 2019, the following results were obtained:

<table>
<thead>
<tr>
<th>Pedestrian Crossing Protection</th>
<th>Compliance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Volumes</td>
<td>100%</td>
</tr>
<tr>
<td>Pedestrian Delays</td>
<td>100%</td>
</tr>
</tbody>
</table>

For a PXO to be numerically justified, both the "Pedestrian Volume" and "Pedestrian Delays" warrants must be 100 percent satisfied.

As outlined in the above table, the pedestrian volumes and delays do satisfy the requirements to install a PXO at the subject intersection at this time.
This study has been evaluated using the updated warrant calculations as adopted by City Council on July 16, 2019 in the Vison Zero 2.0 Road Safety Plan report (Item EE6.8). During the peak eight-hour study period, a total of 192 pedestrian crossings was recorded. For a PXO to be numerically justified at this intersection, the required "Pedestrian Volume" must exceed 100 pedestrians crossing Danforth Road during the peak eight-hour period.

Collision History

An updated review of the available Toronto Police Service collision records for the three-year period ending December 31, 2018 is summarised below:

<table>
<thead>
<tr>
<th>Three-Year Collision Information</th>
<th>Number of Reported Collisions (By Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2016</td>
</tr>
<tr>
<td>Collisions Potentially Preventable by the Installation of Traffic Control Signals</td>
<td>0</td>
</tr>
<tr>
<td>Collisions Involving Pedestrians Crossing Danforth Road</td>
<td>0</td>
</tr>
</tbody>
</table>

Councillor Gary Crawford has been advised of the recommendations of this staff report.
CONTACT

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SIGNATURE

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Acting Director
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ATTACHMENTS

1. Attachment 1 - Location Plan (Traffic Control Signals - Danforth Road at Seminoff Street).

2. Attachment 2 - Environmental Pedestrian Crossover Safety Audit - Danforth Road and Seminoff Street.
Attachment 1 - Location Plan (Traffic Control Signals - Danforth Road and Seminoff Street)

Attachment 2 - Environmental Pedestrian Crossover Safety Audit
### Standards or Criteria to be Met for Physical Suitability of a PXO

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Met/Not Met</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle operating speed less than 60 km/h</td>
<td>Not Met</td>
<td>85th percentile is 69 Km/h</td>
</tr>
<tr>
<td>Not more than four lanes wide on a two-way street, or more than three lanes wide on a one-way street.</td>
<td>Met</td>
<td>Four Lanes</td>
</tr>
<tr>
<td>Traffic volume less than 35,000 vehicles per day (total both directions)</td>
<td>Met</td>
<td>9,967 vehicles per day</td>
</tr>
<tr>
<td>No driveways or entrances nearby</td>
<td>Not Met</td>
<td>Driveway for businesses on both sides of Danforth Road</td>
</tr>
<tr>
<td>No significant volume of turning movements which interfere with PXO.</td>
<td>Not Met</td>
<td>Mosque Driveway</td>
</tr>
<tr>
<td>No visibility problems exist for either pedestrians or motorists.</td>
<td>Met</td>
<td>No significant sightline issues</td>
</tr>
<tr>
<td>No loading zones (including TTC) in the immediate vicinity.</td>
<td>Met</td>
<td>No loading zones or TTC Bus Stops</td>
</tr>
<tr>
<td>Not less than 200 metres to another PXO or traffic control device.</td>
<td>Met</td>
<td>Traffic signal located 204 metres north of intersection</td>
</tr>
</tbody>
</table>