Traffic Control Signals – Milner Avenue at Burrows Hall Boulevard

Date: March 3, 2011

To: Scarborough Community Council

From: Director, Transportation Services, Scarborough District

Wards: Ward 42 – Scarborough-Rouge River

Reference Number: P:\2011\Cluster B\TRA\Scarborough\sc1133 D11-4150148 (D10-3995873 & D09-330446) Milner_Burrows Hall

SUMMARY

The purpose of this report is to secure the authority for the installation of Traffic Control Signals at Milner Avenue and Burrows Hall Boulevard (East Intersection).

Traffic studies and consultation with the community reveal that the existing stop control should be upgraded to traffic control signals to improve safety. As a result, given the needs of area residents and the application of engineering judgement, traffic control signals should be installed.

RECOMMENDATIONS

Transportation Services recommends that:

1. City Council approve the installation of traffic control signals at the intersection of Milner Avenue and Burrows Hall Boulevard (East Intersection).

2. City Council pass or amend the appropriate by-law(s) accordingly.

Financial Impact

The financial cost of installing these new traffic control signals is approximately $150,000.00. The funding for these signals is available in Transportation Services Division’s Capital Works Budget under Project No. CTP711-01.
ISSUE BACKGROUND
Further to a request from the public, Transportation Services staff reviewed the feasibility of installing pedestrian crossing protection at Milner Avenue and Burrows Hall Boulevard. Transportation Services has been made aware of a neighbourhood citizen with a visual disability that would be significantly assisted by traffic control signals.

COMMENTS
The following characteristics describe the intersection of Milner Avenue and Burrows Hall Boulevard:

- This road is classed as a minor arterial road, and the recorded traffic volume on this road is approximately 9,000 vehicles per hour.
- The posted speed limit on Milner Avenue is 50 km/h, and the 85th percentile vehicle speed is 64 km/h in proximity to Burrows Hall Boulevard.
- Adjacent traffic control signals are located approximately 1250 metres to the east at Murison Boulevard and approximately 1460 metres to the west at Progress Avenue.
- The north side of Milner Avenue and Burrows Hall Boulevard is comprised of single family residential dwellings. The south side of Milner Avenue is a mix of light industrial, commercial warehouses, and a nearby place of worship directly opposite Burrows Hall Boulevard.
- Toronto Transit Commission near-side transit stops are located on both sides of Milner Avenue and Burrows Hall Boulevard.
- Milner Avenue and Burrows Hall Boulevard each have pavement widths of approximately 12.9 metres.
- Area pedestrians routinely use the walkway connecting Milner Avenue to the overpass at Neilson Road and Highway 401, which further links with other Toronto Transit Commission service routes. These pedestrians would be well serviced by traffic control signals at Milner Avenue and Burrows Hall Boulevard.

Pedestrian Refuge Island Study
Transportation staff reviewed this intersection of Milner Avenue and Burrows Hall Boulevard for a pedestrian refuge island; however, this site is not well suited for the placement of such an island. A pedestrian refuge island requires a road width of 16.4 metres, but at this intersection the road is only 12.9 metres wide.

Subsequent pedestrian crossing protection studies to the west of this intersection (at the driveways of 601 and 607 Milner Avenue) also revealed that the road is insufficiently wide at 12.9 metres. However, at these locations there was sufficient pedestrian volume at 103 crossings to exceed the guideline threshold of 100 pedestrians crossing during an 8 hour study to warrant the installation of a pedestrian refuge island.

Since a pedestrian refuge island is not suitable given the inadequate road width at all of these locations, each site was further reviewed for the installation of a pedestrian crossover.
Pedestrian Crossover Warrant Studies

The intersection of Milner Avenue and Burrows Hall Boulevard has been reviewed for the placement of a pedestrian crossover; however, the required technical warrants were not met as shown in the table below.

<table>
<thead>
<tr>
<th>Pedestrian Crossover Warrant Milner Avenue and Burrows Hall Boulevard</th>
<th>June 18, 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrant 1: Pedestrian Volume</td>
<td>6%</td>
</tr>
<tr>
<td>Warrant 2: Pedestrian Delay</td>
<td>7%</td>
</tr>
</tbody>
</table>

The study volumes at the two driveways at 601 and 607 Milner Avenue were combined for the placement of a pedestrian crossover; however, the required technical warrants were not met as shown in the table below.

<table>
<thead>
<tr>
<th>Pedestrian Crossover Warrant 601 and 607 Milner Avenue</th>
<th>May 20, 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrant 1: Pedestrian Volume</td>
<td>35%</td>
</tr>
<tr>
<td>Warrant 2: Pedestrian Delay</td>
<td>91%</td>
</tr>
</tbody>
</table>

To support the installation of a pedestrian crossover, both warrants must be satisfied to the extent of 100%. Given these observations, a pedestrian crossover cannot be supported at this time; however, there has been a consistent and increasing trend in the pedestrian warrants towards the required threshold(s). It is also felt that a pedestrian crossover would not be safe due to the curves in the road and the prevailing traffic speeds.

Traffic Control Signal Warrant Study

Transportation staff have twice reviewed the intersection of Milner Avenue and Burrows Hall Boulevard for traffic control signals since 2004. Both times the required numerical warrants were not met. The table below show these results and the consistently increasing delay to cross traffic at this intersection.

<table>
<thead>
<tr>
<th>Traffic Control Signal Warrant Milner Avenue and Burrows Hall Boulevard</th>
<th>Compliance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Control Signal Warrant Milner Avenue and Burrows Hall Boulevard</td>
<td>February 4 2004</td>
</tr>
<tr>
<td>Minimum Vehicular Volume</td>
<td>31%</td>
</tr>
<tr>
<td>Delay To Cross Traffic</td>
<td>39%</td>
</tr>
<tr>
<td>Collision Hazard</td>
<td>0%</td>
</tr>
</tbody>
</table>
Transportation staff also reviewed the driveways at 601 and 607 Milner Avenue for traffic control signals; however, the required numerical warrants were not met as shown in the table below.

<table>
<thead>
<tr>
<th>Traffic Control Signal Warrant</th>
<th>Compliance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>601 and 607 Milner Avenue</td>
<td>May 20, 2009</td>
</tr>
<tr>
<td>Minimum Vehicular Volume</td>
<td>31%</td>
</tr>
<tr>
<td>Delay To Cross Traffic</td>
<td>65%</td>
</tr>
<tr>
<td>Collision Hazard</td>
<td>0%</td>
</tr>
</tbody>
</table>

For traffic control signals to be numerically justified, one of the “Minimum Vehicular Volume” or “Delay to Cross Traffic” warrants must be 100% satisfied or the first two warrants must be at least 80% satisfied. Our review of the Collision Hazard is based on the previous three-year (2005 – 2007) collision history.

As outlined in the above tables, the most current study and the previous years of studies show the traffic volumes do not satisfy the requirements to install traffic control signals at either of the above locations. Nonetheless, traffic control signals are the only feasible form of pedestrian crossing protection at these sites and would enhance pedestrian safety based on the guidelines for each of the three potential traffic control devices. Furthermore, traffic control signals at the intersection of Milner Avenue and Burrows Hall Boulevard compared to the driveways at 601 and 607 Milner Avenue would provide greater service to the residential neighbourhood to the north, providing better sightlines compared to the curved road portion of 601 and 607 Milner Avenue, and therefore is the more prudent site for the traffic control signals.

In recent years (from January 1, 2005 to December 31, 2007) there have been no recorded collisions at this intersection potentially preventable by the installation of traffic control signals or involving pedestrians crossing Milner Avenue.

Based on the volume of pedestrian traffic in this vicinity the guidelines for the installation of a pedestrian refuge island would be met, but since this device is not suitable because of the inadequate road width, the only option appropriate for pedestrian crossing protection is traffic control signals.
Although the traffic control signal warrants are not yet numerically met, the installation of traffic control signals is justified under Engineering Judgement to provide an appropriate level of pedestrian crossing protection.

The Toronto Transit Commission has been consulted on the potential conversion of Milner Avenue and Burrows Hall Boulevard to traffic control signals.

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**SIGNATURE**

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**ATTACHMENTS**

1. Location Plan (Proposed Traffic Control Signals - Milner Avenue and Burrows Hall Boulevard)