



**STAFF REPORT
ACTION REQUIRED**

Installation of Traffic Control Signals: Sentinel Road at Cook Road

Date:	December 7, 2011
To:	North York Community Council
From:	Director, Transportation Services, North York District
Wards:	Wards 8 – York West
Reference Number:	<i>ny12012</i>

SUMMARY

As the Toronto Transit Commission (TTC) operates a transit service on Sentinel Road, City Council approval of this report is required. TTC staff has been advised of the proposed signal installation.

To obtain approval for the installation of traffic control signals at the intersection of Sentinel Road and Cook Road.

The installation of traffic control signals at this location will be providing an improved environment for both vehicular and pedestrian traffic.

RECOMMENDATIONS

Transportation Services, North York District recommends that City Council:

1. Approve the installation of traffic control signals at the intersection of Sentinel Road and Cook Road.

Financial Impact

All costs associated with the installation of the traffic control signals at the intersection of Sentinel Road and Cook Road (estimated at \$150,000.00) is included in the 2012 Operating budget estimates.

ISSUE BACKGROUND

Transportation Services, North York District has reviewed a request from the Ward Councillor on behalf of the area residents to review the feasibility of installing pedestrian crossing protection at the intersection of Cook Road and Sentinel Road.

COMMENTS

Sentinel Road is classified as a minor arterial road with a posted speed limit of 40 km/h between Murray Ross Parkway and The Pond Road and has a pavement width of 14.5 metres. Traffic control signals are located approximately 347 metres to the north at the Pond Road and 258 metres to the south at Murray Ross Parkway. It should be noted that Sentinel Road serves as the primary south access to York University.

Located on either side of Sentinel Road from Murray Ross Parkway to Assiniboine Road is the Village at York residential community. These homes provide not only a place to live for the families of the community, but also for the students of York University given its close proximity.

In response to the public request for pedestrian crossing protection at this intersection, this Division has undertaken several traffic studies, turning movement counts, pedestrian crossing counts, and has also reviewed the collision history along this section of roadway.

Traffic Control Signals

The results of the eight hour turning movement count at the intersection of Cook Road and Sentinel Road has indicated the technical requirements for the installation of traffic control signals were satisfied to the following extent:

	Warrant	Compliance
Warrant 1	Minimum Vehicular Volume	38%
Warrant 2	Delay to Cross Traffic	83%
Warrant 3	Collision Hazard	20%

To satisfy the installation of traffic control signals, one of either the Minimum Vehicular Volume or Delay to Cross Traffic warrants must be 100 percent satisfied, or both must be satisfied to the extent of 80 percent. The Collision Hazard warrant is based on the number of collisions susceptible to correction by the installation of traffic control signals, and must be 100 percent satisfied.

In reviewing the most recent three-year collision history for the Cook Road and Sentinel Road intersection, there have been three collisions of a type susceptible to correction by the installation of traffic control signals.

Therefore, in view of the above study results, this Division is unable to support the installation of a traffic control signal based only on vehicle demand.

Pedestrian Crossover

In addition to the above, in order to determine the feasibility of installing a pedestrian crossover and to identify the existing traffic conditions and any difficulty pedestrians experience when crossing Sentinel Road, this Division has also conducted an eight-hour pedestrian study.

The technical warrants for the installation of a pedestrian crossover were satisfied to the following extent:

Warrant		Compliance
Warrant 1	Pedestrian Volume	100%
Warrant 2	Pedestrian Delay	100%

To support the installation of a pedestrian crossover, both warrants must be satisfied 100 percent. Our study revealed that during the eight-hour study, a total of 444 pedestrians crossed Sentinel Road, in the immediate vicinity of Cook Road, whereas a minimum of 275 are required. Of the pedestrians that crossed, 139 experienced delays greater than 10 seconds, whereas a minimum of 75 pedestrians must be observed being delayed crossing the road.

In reviewing the most recent three-year collision history for the Cook Road and Sentinel Road intersection, there have been zero collisions involving pedestrians crossing Sentinel Road, in the vicinity of Cook Road. Given the study results, the installation of a pedestrian crossover is warranted. Although a pedestrian crossover is warranted at this location, in order to insure that the installation of a pedestrian crossover is the most suitable traffic control measure, this Division also subjected the proposal to an Environmental Audit.

The Environmental Audit takes into consideration the geometry of the roadway, traffic flow, sight lines, and spacing of adjacent traffic control measures. If motorist speeds are too high, the traffic volumes are too great, or the road is too wide, the operational safety of the pedestrian crossover is compromised.

The following table illustrates the results of the Environmental Audit.

Environmental Audit

Standard/Criteria to be met for physical suitability of a pedestrian crossover	Met / Not Met	Comment
Vehicle operating speed less than 60 km/h	Met	Posted Speed 40 km/h 85th percentile speed (NB 56 km/h & SB 58 km/h)
Not more than four lanes wide on a two-way street, or more than three lanes wide on a one-way street	<i>Not Met</i>	4 lanes and bicycle lanes NB & SB (roadway 14.5 m wide)
Traffic Volumes less than 35,000 vehicles per day (total both directions)	Met	10,972 vehicles per day
No driveways or entrances nearby	<i>Not Met</i>	Cook Rd
No significant volume of turning movements which interfere with PXO	<i>Not Met</i>	EB left turns/right turns 106/153 vehicles, WB left turns/right turns 112/88 vehicles
No visibility problems exist for either pedestrians or motorists	Met	Visibility is clear and unobstructed
No loading zones (including TTC) in the immediate vicinity	<i>Not Met</i>	NB near side and SB far side TTC stops
No less than 215 metres to another PXO or traffic control device	Met	347 m north to TCS at the Pond Rd 258 m south to TCS at Murray Ross Pkwy

The results of the audit indicate that four out of eight criteria failed at this location and that a pedestrian crossover is unsuitable. Typically, when the Audit fails the installation of a traffic control signal would then be considered and would be installed regardless of the warrant requirement for the installation of a traffic control signal.

Based on the results of a pedestrian crossing studies, the signalization of the intersection of Sentinel Road and Cook Road has been identified as necessary in order to accommodate high volume of pedestrians crossing Sentinel Road at Cook Road. The proposed traffic control signal will provide pedestrians with a protected pedestrian crossing area and will also provide an increased level of control for vehicular traffic at this intersection.

The Ward Councillor has been advised of the proposal to install traffic control signals at the intersection of Sentinel Road and Cook Road.

CONTACT

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SIGNATURE

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ATTACHMENTS

Attachment 1: Map – Sentinel Road at Cook Road; Traffic Control Signals