

COMMITTEE OF THE WHOLE – DECEMBER 3, 2007

EDGELEY BOULEVARD AND FOUR VALLEY DRIVE PROPOSED ALL-WAY STOP CONTROL

Recommendation

The Commissioner of Engineering and Public Works recommends:

1. That an all-way stop control be installed at the north intersection of Edgeley Boulevard and Four Valley Drive as the Provincial All-way Stop Warrant is met;
2. That a traffic signal not be installed at the north intersection of Edgeley Boulevard and Four Valley Drive as the Provincial warrant is not met; and
3. That York Regional Police be requested to strictly enforce the 50 km/h speed limit.

Economic Impact

The cost to install the stop signs and pavement markings would have an initial impact and will be absorbed in the 2008 Operating Budget. The costs to maintain the signs and pavement markings would have an impact to future Operating Budgets.

Communications Plan

Staff will notify the area businesses of Council's decision on this matter.

Purpose

To review the feasibility of implementing a traffic signal or an all-way stop control at the north intersection of Edgeley Boulevard and Four Valley Drive, in response to a request from the Local Councillor.

Background - Analysis and Options

At its meeting on October 9, 2007, Council directed:

- “1. That staff be requested to investigate the need for and feasibility of installing an allway stop control at the north intersection of Four Valley Drive and Edgeley Boulevard.**
- 2. That staff investigate the need for and feasibility of installing a signalized intersection at the north intersection of Four Valley Drive and Edgeley Boulevard.**
- 3. That staff report to a future Committee of the Whole meeting with respect to their findings in November 2007.”**

Edgeley Boulevard is designed as a collector roadway with a 26.0 metre right-of-way and 14.0 metre travelled lanes and Four Valley Drive is designed as an industrial roadway with a 23.0 metre right-of-way and 11.5 metre travelled lanes. The existing stop controls are located on Four Valley Drive. The area is shown in Attachment No.1.

Staff conducted a turning movement count during the noon and evening peak time periods on Tuesday, October 30, 2007, and the morning peak time period on Wednesday, October 31, 2007, at the north intersection of Edgeley Boulevard and Four Valley Drive. On the days of the traffic

study the weather was clear. The data collected was compared to the Provincial Warrant for All-Way Stop Control with the following results:

- Warrant 1 – Minimum Vehicular Volumes Warranted 72%
- Warrant 2 – Accident Hazard Warranted 0%
- Warrant 3 – Sight Restriction Warranted 100%

All-way stop controls are recommended when one of the above warrants are satisfied to 100% or more. There have been no reported collisions from June 2005 through to June 2006 at this intersection susceptible to prevention by implementing all-way stop control. The intersection does not meet the minimum volume of vehicles entering the intersection from the side streets. However, there are sight restrictions noted at this intersection viewing the northbound traffic from the east approach. According to the results above, this intersection does meet the minimum requirements of the warrant.

The sight distance was reviewed and it was noted that the required minimum sight line distance of 90 metres for arterial and collector roadways was not met. The sight line requirement was not met due to the existing roadway geometrics. South of the intersection there is a vertical curve on Edgeley Boulevard that reduces these sight lines.

Given that the built environment cannot be easily altered physically and in consideration of the Provincial Warrant Criteria being met, it is recommended that an all-way stop control be installed at this intersection.

The installation of this stop control will bring this intersection into compliance with all applicable standards.

The collected traffic volumes were also compared to the Provincial Warrant for Traffic Signal Installation as shown below.

- Warrant 1 – Minimum Vehicular Volumes Warranted 57%
- Warrant 2 – Delay to Cross Traffic Warranted 80%
- Warrant 3 – Accident Experience Warranted 0%

For a traffic signal control to be warranted, one or more of the 3 warrants must be satisfied 100% or more. The results of the turning movement counts do not meet the requirements of the Provincial Warrant for Traffic Signal Installation. The above results reflect the highest eight peak traffic hours at the intersection.

There is also Warrant 4 – Combination Warrant which may be used if no individual warrants are satisfied 100%, in which two warrants satisfying 80% or more could warrant the installation of a traffic signal. Based on the study results, Warrant 4 does not meet requirements.

Staff installed two Automatic Traffic Recorders (ATR's) on Edgeley Boulevard, one north of Four Valley Drive and one south of Four Valley Drive for 24 hours on November 1, 2007. Using the data collected from the ATR's, staff is able to calculate the average speed and the 85th percentile speed. The 85th Percentile Speed is the speed at which 85% of vehicles are driving or less, and is used to determine the average maximum speed that vehicles tend to travel. The results are summarized as follows:

	AADT		Average Speed		85 th percentile Speed	
	North-bound	South-bound	North-bound	South-bound	North-bound	South-bound
Edgeley Boulevard south of Four Valley Drive	3435 veh/day	3215 veh/day	49 km/h	51 km/h	61 km/h	61 km/h
Edgeley Boulevard north of Four Valley Drive	4035 veh/day	4023 veh/day	50 km/h	60 km/h	49 km/h	60 Km/h

According to the Geometric Design Guide for Canadian Roads, Collector Roads can accommodate up to 12,000 vehicles per day. The traffic volumes collected on Edgeley Boulevard are within this limit.

The existing speed limit on Edgeley Boulevard is 50 km/h. The average speeds range from 49 km/h to 60 km/h. The 85th percentile speed is in the 60 km/h range. Traffic Services staff will contact York Regional Police for enforcement of the 50 km/h speed limit.

Relationship to Vaughan Vision 2007

This traffic study is consistent with Vaughan Vision 2007 as to identify and implement innovative traffic management alternatives to improve general traffic safety (1.1.3).

This report is consistent with the priorities previously set by Council.

Regional Implications

Not Applicable.

Conclusion

Based on staff's review, it is recommended that all-way stop control be installed at the north intersection of Edgeley Boulevard and Four Valley Drive. It is also recommended that a traffic signal not be installed at the intersection.

Attachments

- 1. Location Map

Report prepared by:

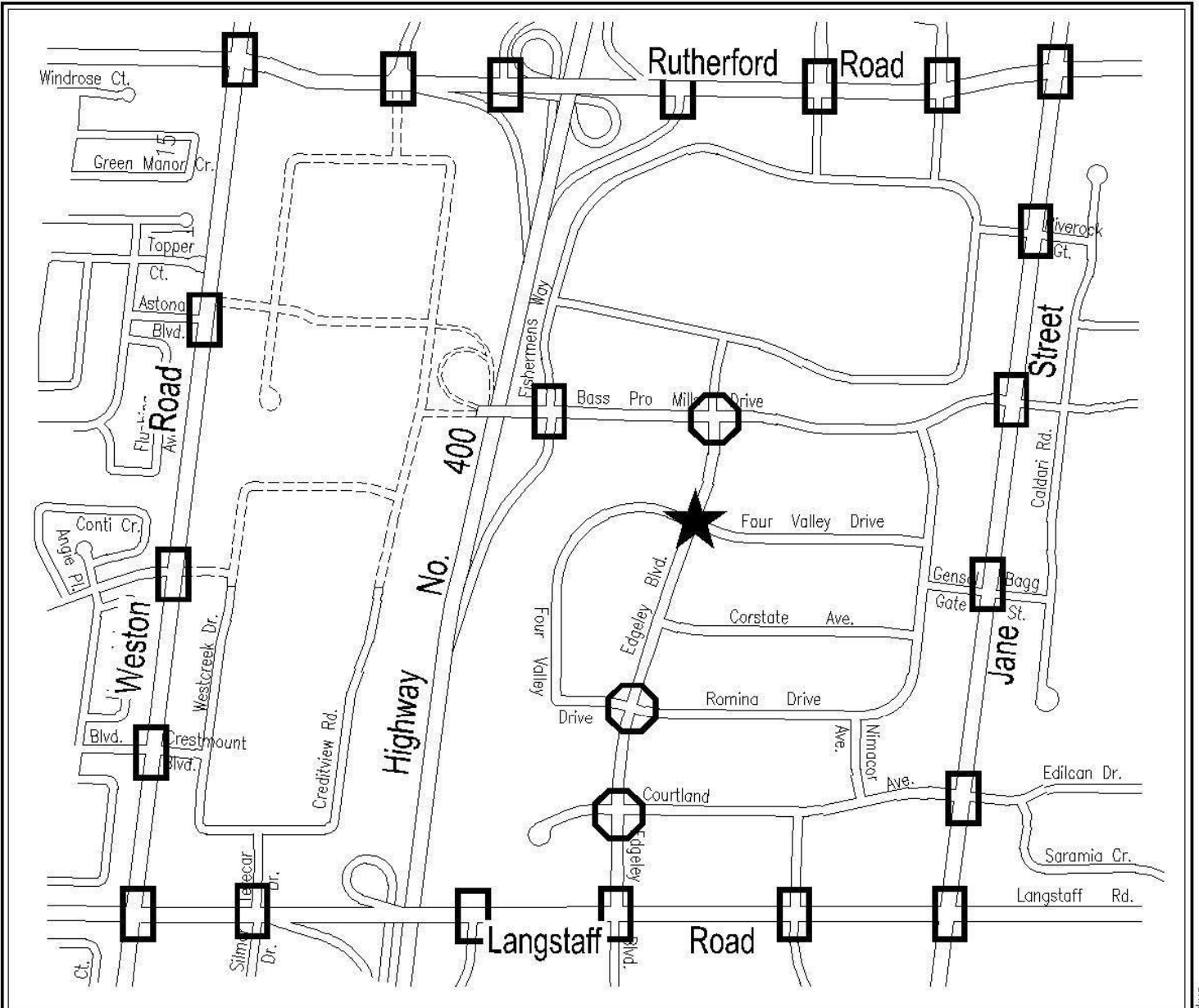
Leslie Winfrow, Senior Traffic Technologist, Ext. 3131
Mike Dokman, Supervisor Traffic Engineering, Ext. 3118

Respectfully submitted,

Bill Robinson, P. Eng.
Commissioner of Engineering and Public Works
LW:mc




Gary P. Carroll, P. Eng.
Director of Engineering Services

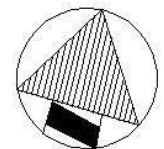
ATTACHMENT No. 1



EDGELEY BOULEVARD & FOUR VALLEY DRIVE PROPOSED ALL-WAY STOP CONTROL

LEGEND

-  PROPOSED ALL-WAY STOP
-  EXISTING TRAFFIC SIGNALS
-  EXISTING ALL-WAY STOP CONTROL



NOT TO SCALE