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TRAFFIC CONTROL SIGNALS RUTHERFORD ROAD AT SHERWOOD PARK DRIVE AND RUTHERFORD ROAD AT KEELE STREET CITY OF VAUGHAN

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, April 26, 2006, from the Commissioner of Transportation and Works:

1. RECOMMENDATIONS

It is recommended that:

1. Traffic control signals not be installed at the intersection of Rutherford Road (Y.R. 73) at Sherwood Park Drive, in the City of Vaughan, at this time.
2. The Regional Clerk forward this report to the Clerk of the City of Vaughan.

2. PURPOSE

The purpose of this report is to address two requests from the City of Vaughan Council:

1. Investigate the feasibility of installing traffic control signals at the intersection of Rutherford Road at Sherwood Park Drive. A plan showing the location of the intersection is shown in *Attachment 1*.
2. Investigate the feasibility of increasing the length of the northbound left-turn advance phase at the intersection of Keele Street and Rutherford Road. A plan showing the location of the intersection is shown in *Attachment 1*.

3. BACKGROUND

At the City of Vaughan Council meeting on January 23, 2006, Council adopted a recommendation to request York Region to investigate the feasibility of installing traffic control signals at the intersection of Rutherford Road and Sherwood Park Drive, and the feasibility of increasing the length of the northbound left-turn advance phase at the intersection of Keele Street and Rutherford Road.

4. ANALYSIS AND OPTIONS

4.1 Traffic Control Signal Request – Rutherford Road at Sherwood Park Drive

The Region's policy for the installation of traffic control signals is based on a series of guidelines established by the Ministry of Transportation and those approved by Regional Council at its meeting on October 17, 2002. The following warrants are to be used to determine whether or not traffic control signals are justified at a location:

- Traffic control signal warrants as outlined in Book 12 of the *Ontario Traffic Manual*
- Safety warrant
- “T” type intersections warrant
- Peak hour delay for entering onto the major street from the side street
- Installation of unwarranted traffic signals paid by local municipalities

Table 1 summarizes the traffic signal warrant from the traffic data collected at the intersection of Rutherford Road at Sherwood Park Drive on Tuesday, February 28, 2006.

Table 1
Traffic Signal Warrant Analysis

Warrant Component	Rutherford Road at Sherwood Park Drive
Minimum Vehicular Delay	46 %
Delay to Cross Traffic	82 %
Collision Hazard (last 3 years)	0 %
“T” Intersection	Yes
Minor Street Peak Hour Delay:	
Unsignalized	N/A
Signalized	53 sec/veh
Safety Performance	Not improved with signals
Paid by Local Municipality	Not warranted (<70%)

The Ministry of Transportation guidelines indicate that an intersection meets the warrant conditions for traffic control signals when two of the warrant components are at or above 80% compliant, or one component is 100% compliant.

In addition, Regional Council adopted a new policy on the installation of traffic control signals that takes safety performance and peak hour delay into consideration when conducting a traffic signal warrant. The safety warrant of this policy indicates that there would be no reduction in collisions if the intersection was to be signalized, however, the minor street peak hour delay warrant determines that signalizing the intersection will increase the delay to the minor street.

Installing traffic control signals at a location that does not meet the traffic signal warrant can result in a reduction in overall intersection safety. Specifically, the installation of

traffic control signals increases the occurrence of certain types of collisions. Rear-end collisions on the major streets, for example, can increase by as much as 60% after the installation of traffic control signals. Additionally, the average delay to side street traffic is often substantially increased during periods of the day outside of peak hours.

This increased delay can result in driver frustration and non-compliance with the traffic signal indications. To avoid these safety concerns, York Region's policy is to install traffic control signals only if the warrant criteria are met. In accordance with York Region's current policy, this intersection does not satisfy the traffic signal warrants, therefore, traffic control signals are not recommended at this time.

4.2 Traffic Control Signal Timing Modification – Keele Street at Rutherford Road

Keele Street and Rutherford Road is a signalized intersection which accommodates approximately 63,440 vehicles per day. Keele Street carries an average volume of 23,110 vehicles per day and Rutherford Road carries an average volume of 40,790 vehicles per day.

Regional staff conducted an arterial traffic control signal timing review along Keele Street between Major Mackenzie Drive and Ganter Gate on February 6, 2006. The review found that there were long northbound left-turn queues. As a result, it was determined that the northbound left-turn traffic requires additional time. The length of the northbound left-turn advance phase was increased by 34% in the afternoon peak period (critical peak) and by 12% in the morning peak period. This increase was implemented on February 9, 2006, prior to the Region receiving a request from the City of Vaughan. The intersection was reviewed again after the request was received and is operating well; therefore, no further adjustments are required.

5. FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

6. LOCAL MUNICIPAL IMPACT

This report is in response to the City of Vaughan's Council resolution requesting York Region to install traffic control signals at the intersections of Rutherford Road and Sherwood Park Drive, in the City of Vaughan. This intersection does not satisfy the minimum traffic control signal warrant conditions; therefore, staff recommends that traffic control signals not be installed at this time.

7. CONCLUSION

This report is in response to a request from the City of Vaughan Council to consider the installation of traffic control signals at the intersection of Rutherford Road at Sherwood Park Avenue, in the City of Vaughan. This intersection does not satisfy the minimum traffic signal warrant conditions, therefore, staff recommends that traffic control signals not be installed at this time.

Regional staff has increased the length of time for the northbound left-turn advance phase at the intersection of Keele Street and Rutherford Road. The intersection of Keele Street and Rutherford Road is operating well as a result of the timing changes.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause was included in the agenda for the May 10, 2006 Committee meeting.)