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TRAFFIC OPERATIONAL ASSESSMENT BAYVIEW AVENUE AT ROYAL ORCHARD BOULEVARD TOWN OF MARKHAM

The Transportation and Works Committee recommends that consideration of the following report, March 21, 2004, from the Commissioner of Transportation and works be deferred:

1. RECOMMENDATIONS

It is recommended that:

1. A traffic control signal at the intersection of Bayview Avenue (Y.R. 34) and Royal Orchard Boulevard not be considered at this time.
2. The Region support the future extension of Royal Orchard Boulevard onto the Shouldice Hospital entrance opposite Green Lane.
3. The Regional Clerk forward a copy of this report to the Clerk at the Town of Markham.

2. PURPOSE

The purpose of this report is to present information, in response to a request from the Town of Markham, Ward 1 Councillor Stan Daurio, regarding a recent operational review of the intersection of Bayview Avenue and Royal Orchard Boulevard. A location plan is provided as *Attachment 1*.

3. BACKGROUND

At the meeting of the Transportation and Works Committee on June 18, 2003, Councillor Stan Daurio made a presentation regarding the installation of traffic signals on Bayview Avenue at Royal Orchard Boulevard. Regional staff were requested to work with the staff of the Town of Markham, and report on the existing congestion which creates extensive queuing along Royal Orchard Boulevard, approaching Bayview Avenue, and possible solutions including the installation of traffic signals.

At its meeting on October 17, 2002, Regional Council adopted Clause 8 of Report No. 9 of the Transportation and Works Committee recommending a policy providing a warrant process for the installation of traffic control signals at locations along the York Regional road network.

The Town of Markham has recently indicated a new senior's centre will be opening adjacent to the Community Centre located at the south east corner of Bayview Avenue at

Green Lane. It was reported that seniors from west of Bayview Avenue are not comfortable crossing at Bayview Avenue at Royal Orchard Boulevard.

4. ANALYSIS AND OPTIONS

The intersection of Bayview Avenue and Royal Orchard Boulevard is a “T” intersection located in the Town of Markham, with only right-in, right-out movements permitted through channelization. Bayview Avenue is a five-lane urban cross section that carries an average volume of 34,170 vehicles per day.

During the fall/winter of 2003/2004, York Region and the Town of Markham staff undertook the following studies in order to evaluate the request for the installation of a traffic control signal, to resolve congestion issues during the morning peak period for traffic travelling southbound on Royal Orchard Boulevard to access Bayview Avenue:

- A 10-hour turning movement count.
- Visual observations.
- Delay analysis studies.
- Collision patterns.

4.1 Intersection Delay

Regional staff completed several intersection delay studies during the morning peak hour at the intersection of Bayview Avenue and Royal Orchard Boulevard during the month of November 2003, and most recently February 2004. The typical results of the intersection delay studies are summarized in *Attachment 2*.

During the study period, the average queue length is two vehicles with an average stop time of 36 seconds per vehicle. The peak 15-minute period occurs between 8:15 a.m. and 8:30 a.m. During this time period, the maximum number of vehicles queued along Royal Orchard Boulevard exiting onto Bayview Avenue is 17, while the maximum stop time is 171 seconds. During this same time period, the average queue is five vehicles with an average stop time of 70 seconds per vehicle. In addition, York Region Transit staff indicated all three bus routes operating within this area are on their scheduled times, and do not experience any unusual delays during the morning rush hour.

4.2 Bayview Avenue from Royal Orchard Boulevard to Green Lane

An area of concern related to this intersection is a “weave” manoeuvre to access Green Lane from Royal Orchard Boulevard. This manoeuvre requires that vehicles move to the left turn lane to access Green Lane when exiting Royal Orchard Boulevard. The distance between these two intersections is approximately 120 metres.

On Thursday, December 4, 2003, the traffic turning right from Royal Orchard Boulevard onto Bayview Avenue to make a left turn at the Green Lane intersection was counted. There were a total of 35 vehicles between 7:45 a.m. and 8:45 a.m. making this

manoeuvre with little difficulty due to the courteous southbound traffic leaving space to cross Bayview Avenue. There also have been no reported collisions during the past three years of vehicles making this manoeuvre.

Although this appears to be a difficult manoeuvre, it is generally working without incident.

4.3 Traffic Control Signal

The intersection of Bayview Avenue and Royal Orchard Boulevard cannot be assessed using the signal warrant process due to the absence of left turning traffic and no cross traffic. This is not a typical intersection, as the traffic control signal would be considered a half signal, controlling southbound and eastbound traffic only.

Signalizing this intersection would require geometric changes to properly align the roadways at 90 degrees to Bayview Avenue. A traffic control signal operation would be further complicated due to the following:

- The existing traffic control signal located at Green Lane, 120 metres south of Royal Orchard Boulevard.
- The existing traffic queuing during the morning peak period on Bayview Avenue from John Street up to and past Royal Orchard Boulevard.

In addition, the average delay of 70 seconds per vehicle during the 15-minute morning peak period exiting onto Bayview Avenue does not justify the \$50,000 to \$60,000 costs associated with the installation of traffic control signals. During peak periods, the side street traffic at traffic control signals exceeds the average delay being experienced at this intersection.

The long term solution that would resolve the delay concerns, and is supported by Regional staff, is the extension of Royal Orchard Boulevard onto the Shouldice Hospital entrance opposite Green Lane. This solution provides Royal Orchard Boulevard with an access controlled by a traffic control signal.

5. FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

6. LOCAL MUNICIPAL IMPACT

This report is in response to a request from the Town of Markham, Ward 1 Councillor Stan Daurio to review traffic operations at the intersection of Bayview Avenue and Royal Orchard Boulevard and to consider the installation of traffic control signals.

The study and resulting report have been completed in collaboration with the Town of Markham staff.

7. CONCLUSION

Staff from York Region and the Town of Markham completed an operational review and assessment of the need for a traffic control signal at the intersection of Bayview Avenue and Royal Orchard Boulevard, including discussing options to improve the traffic operations at this intersection.

The results of the intersection delay studies indicate that during the study period the average queue length is two vehicles with an average stop time of 36 seconds per vehicle. The peak 15-minute period occurs between 8:15 a.m. and 8:30 a.m. During this time period, the maximum number of vehicles queued along Royal Orchard Boulevard exiting onto Bayview Avenue is 17. While the maximum stop time is 171 seconds.

Regional staff concludes there is insufficient justification to install traffic control signals based upon the results of the detailed studies.

The long term solution that would resolve the delay concerns, and is supported by Regional staff, is the extension of Royal Orchard Boulevard onto the Shouldice Hospital entrance opposite Green Lane. This solution provides Royal Orchard Boulevard with an access controlled by a traffic control signal.

The Senior Management Group has reviewed this report.

(A copy of the attachments referred to in the foregoing has been forwarded to each Member of Council with the May 5, 2004 Transportation and Works Committee agenda and a copy thereof is on file in the Office of the Regional Clerk.)