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DAVIS DRIVE WEST EVALUATION OF LOCATIONS FOR TRAFFIC CONTROL SIGNALS TOWNSHIP OF KING

The Transportation and Works Committee recommends the following:

- 1. The presentation by Brian Harrison, Director, Operations, Roads Branch, Transportation Services Department, be received;**
- 2. Recommendations 2, 3 and 4 contained in the following report, March 19, 2008, from the Commissioner of Transportation Services, be adopted;**
- 3. At the owner's request and expense, a traffic control signal at the entrance to the Cardinal Golf Course on Davis Drive West (Y.R. 31) be installed;**
- 4. A traffic control signal at the intersection of Davis Drive West (Y.R. 31) and Keele Street (Y.R. 6):**
 - a) be installed; and**
 - b) be paid for by the Township of King;**
- 5. Staff be requested to revisit the current regional policy entitled Traffic Signal Warrants, as it applies to both urban and rural municipalities, and report back to the Transportation and Works Committee at their June 11, 2008 meeting.**

1. RECOMMENDATIONS

It is recommended that:

- 1. In accordance with Region policy, traffic control signals not be installed on Davis Drive West.**
- 2. The following recommendations from the Transportation and Works Committee report dated February 6, 2008, be adopted:**
 - a) "Intersection Ahead" signs be installed on Davis Drive West (Y.R. 31) at the approaches to the south leg of Dufferin Street (Y.R. 53) and the north leg of Dufferin Street (Y.R. 53); Keele Street (Y.R. 6), and the south leg of Jane Street (Y.R. 55) and the north leg of Jane Street;**

- b) Flashing amber beacons be installed on the intersection ahead signs on Davis Drive West (Y.R. 31) at the approaches to the south leg of Dufferin Street (Y.R. 53) and the north leg of Dufferin Street (Y.R. 53);
 - c) Centreline rumble strips be installed on Davis Drive West (Y.R. 31) from Glenview Heights Lane to approximately 580 metres east of the south leg of Dufferin Street (Y.R. 53);
 - d) The existing speed limit of 80-km per hour on Davis Drive West (Y.R. 31) from 400 metres west of the west limit of Eagle Street to 200 metres west of the west limit of Bathurst Street (Y.R. 38), be reduced from 80-km per hour to 60-km per hour, in the Town of Newmarket and the Township of King and York Regional Police be requested to assist with the enforcement of this speed zone, as their resources permit;
 - e) Pavement markings on Davis Drive West (Y.R. 31) be modified to assist in reducing speeds;
 - f) Regional staff be directed to discuss possible modifications to the south-east ramp from Highway 400 to Davis Drive West (Y.R. 31) with staff from the Ministry of Transportation.
- 3. The Regional Solicitor prepare the necessary by-law for the speed limit change.
 - 4. The Regional Clerk forward this report to the Clerk of the Town of Newmarket, Township of King and to the Chief of York Regional Police.

2. PURPOSE

This report provides Regional Council with the results of analysis and consultation on the question of installing traffic control signals on Davis Drive West, between Highway 400 and Bathurst Street, in the Township of King. This report also adopts the recommendations regarding operational improvements on Davis Drive West, as outlined in a previous Transportation and Works Committee report titled *Davis Drive West - Traffic Operations Review*, dated February 6, 2008.

3. BACKGROUND

On November 28, 2007, a report was presented to the Transportation and Works Committee which identified immediate opportunities to make operational improvements on Davis Drive West between Highway 400 and Bathurst Street.

On February 6, 2008, a second report was presented to the Transportation and Works Committee which included a presentation by Regional staff and a deputation by Mr. Dalt Hicks of Cardinal Golf Club. This report concluded that based on the current Regional policy, signals are not currently warranted at any location on Davis Drive West. The report recommended other improvements such as speed reductions and speed penalty advisory signs be implemented.

The February 6, 2008, report was not adopted by the Transportation and Works Committee. However, staff was requested to convene a meeting of all interested parties with an intent to consider possible locations to install a minimum of two traffic control signals on Davis Drive West and report back to the Transportation and Works Committee on April 9, 2008.

4. ANALYSIS AND OPTIONS

Cardinal Golf Club, Zander Sod and the Township of King have requested the Region to consider installing signals at one or more intersections on Davis Drive West, between Highway 400 and Bathurst Street, in order to provide opportunities for traffic to access Davis Drive West from the intersecting roads and from the two businesses.

Cardinal Golf Club is a private business. In accordance with Regional policy, if traffic at this entrance met the minimum traffic warrants, traffic control signals could be installed at the owner's expense. Zander Sod is also a private business and has its main access onto Jane Street, north of Davis Drive West, with a secondary access onto Davis Drive West, opposite the south leg of Jane Street. Typically, if traffic control signal warrants were met at the Davis Drive West/Jane Street/Zander Sod intersection, the Region would install traffic control signals at the Region's cost.

The intersections of Keele Street and Dufferin Street are municipal roadways that, if traffic volumes met the minimum warrants, the installation of traffic control signals would be paid for by the Region. Alternatively, in accordance with the policy adopted by Regional Council in October of 2002, if the traffic volumes at any municipal intersection on Davis Drive West satisfied 70% of the warrant thresholds, the installation cost of traffic control signals would be the responsibility of the local municipality. Maintenance costs would also be the responsibility of the local municipality until the warrant thresholds are met at which time 100% of the original installation cost would be reimbursed by the Region. As indicated in previous reports, traffic control signals are not warranted at any of these intersections or private entrances on Davis Drive West.

The issue is accessing Davis Drive West from the side streets and in particular from Cardinal Golf Club and Zander Sod

The traffic on Dufferin Street, Keele Street, Jane Street and Cardinal Golf Club is insufficient to warrant traffic control signals. Installing signals at any of these locations

will provide ease of access where the signal is located, however; it will also increase the delay to traffic on Davis Drive West and increase the traffic volumes on these north/south roads. Placing signals at any one location will not provide sufficient gaps to allow ease of access from the other locations to Davis Drive West due to the large distances between the intersections and the variations in speed on Davis Drive West. The only solution that will provide safe and convenient access from Cardinal Golf Club to Davis Drive West is to place traffic control signals at the private entrance to Cardinal Golf Club. Similarly, to provide safe and convenient access for Zander Sod a traffic control signal should be placed at the Jane Street south intersection which is opposite to the entrance to Zander Sod.

Moving towards a solution to provide gaps in traffic for Cardinal Golf Club, Zander Sod and the intersecting streets

As recommended by the Transportation and Works Committee, Regional staff met with representatives from York Regional Police, the Township of King, the Town of Newmarket, Dalt Hicks, owner of Cardinal Golf Club, and Klaus Zander, owner of Zander Sod on Wednesday, February 27, 2008. The intent of this meeting was to discuss the possibility of installing traffic control signals at Jane Street, Keele Street, Cardinal Golf Club and/or Dufferin Street.

Since the minimum warrants for traffic control signals, based on current Regional policy, are not satisfied, the group evaluated each of the locations using the following criteria:

- Traffic volume
- Community impact
- Ease of access from Cardinal Golf Club
- Meets current Regional signal policy

In order to assess the merits of installing traffic control signals on Davis Drive West, staff created an evaluation system to score each location based on four criteria. The technical evaluation was based on a range of 1 to 10 (1 being worst case and 10 being best case) for each of the four criteria. As shown in *Table 1*, the intersection of Davis Drive West and the entrance to Cardinal Golf Club received the highest overall score and Dufferin Street received the lowest overall score. Considering the impact of traffic into the communities, signalizing Dufferin Street would have the greatest impact on Township of King residents in Ansnorveldt and other farming communities north of Davis Drive West. Signalizing the entrance to Cardinal Golf Club would provide the best ease of access for vehicles entering and exiting the facility, while providing the least impact of traffic into the community.

Table 1
Technical Evaluation of Traffic Control Signals on Davis Drive West

Intersection	Traffic Volume	Community Impact	Ease of Access from Cardinal Golf Club	Meets Current Regional Signal Policy	Total Score
Jane Street South/ Zander Sod Farm	4	7	6	No	17
Keele Street	6	4	4	No	14
Dufferin Street North	5	1	1	No	7
Cardinal Golf Club	10	10	10	No	30

This technical evaluation shows that signalizing the entrance to Cardinal Golf Club would provide the greatest overall benefit for Cardinal Golf Club with the least impact on other traffic and the community. The typical trip generation for golf courses is weekend use and normally outside of peak hour commuter traffic when volumes are lower on Davis Drive West.

After reviewing all the technical aspects, and pros and cons of signalizing each location, it was determined that the least amount of traffic delays and impact to communities would be to signalize the entrance to Cardinal Golf Club and Jane Street South/Zander Sod. There are existing signals at Highway 400 and Davis Drive West, both for northbound and southbound traffic. Introducing signals at Jane Street South/Zander Sod and at the entrance to Cardinal Golf course will have the least impact on driver expectation.

Traffic control signals at Dufferin Street North are not warranted and would provide no benefit to Cardinal Golf Club

The intersection of Davis Drive West and Dufferin Street north is a “Tee” intersection that provides a north/south route to Ansnorveldt and the farming communities of the Holland Marsh. Dufferin Street is a Township of King road and providing a traffic control signal at this intersection would benefit the local street traffic and allow ease of access to Davis Drive West. Traffic volumes on Dufferin Street are relatively low and are the lowest of all intersections included in this assessment. Signals at this location would increase traffic on Dufferin Street into Ansnorveldt and local roads north of Davis Drive West and create additional delay to traffic on Davis Drive West. Signals at this location would provide no benefit to traffic exiting Cardinal Golf Club due to the distance from this municipal intersection to the private access point.

Traffic control signals at Keele Street are also not warranted and would provide little benefit to Cardinal Golf Club

The intersection of Davis Drive West and Keele Street is an aligned cross intersection that provides a route to Kettleby, south of Davis Drive West, and the farming communities of the Holland Marsh to the north of Davis Drive West. Keele Street, north and south of Davis Drive West, is also a Township of King road. A traffic control signal at this intersection would benefit the local street traffic and allow ease of access to Davis Drive West. Traffic volumes on Keele Street are also relatively low, however; are the highest of all municipal intersections included in this assessment, but still are not sufficient to warrant traffic control signals. Signals at this location would increase traffic on Keele Street into the community of Kettleby and local roads north of Davis Drive West and create additional delay to traffic on Davis Drive West. Signals at this location would provide little benefit to traffic exiting Cardinal Golf Club due to the distance from this municipal intersection to the private access point.

Traffic control signals at the entrance to Cardinal Golf Club are the ideal location from both a traffic and community perspective

The intersection of Davis Drive West and the entrance to Cardinal Golf Club is a “Tee” intersection that provides sole access to the golf course and club house. A traffic control signal at this private entrance would benefit the patrons and employees of the golf course by providing an access to Davis Drive West. A signal at this location would be triggered by vehicles exiting the golf club, providing a safe and unopposed access to Davis Drive West. This would typically occur during the week-end and outside of the peak hour commuter traffic when volumes are lower on Davis Drive West. Signalizing the entrance to Cardinal Golf Club would provide the greatest overall benefit for Cardinal Golf Club with the least impact on other traffic on Davis Drive West and the community. A signal at this location may also provide some gaps for traffic exiting from Zander Sod.

Traffic control signals at Jane Street South/Zander Sod are not warranted yet may provide some benefit to Cardinal Golf Club

The intersection of Davis Drive West and Jane Street South/Zander Sod is an aligned cross intersection that provides a private access to Zander Sod to the north and a route through to the residential community south on Jane Street. Jane Street, south of Davis Drive West is a Regional road. A traffic control signal at this intersection would benefit the local street traffic and Zander Sod allowing ease of access to Davis Drive West. Traffic volumes on Jane Street south are also low and do not warrant traffic control signals. Signals at this location would increase traffic on Jane Street south and create additional delay to traffic on Davis Drive West yet may provide some benefit to Cardinal Golf Club as their entrance is relatively close.

The typical operation of a traffic control signal will provide little benefit to create gaps in traffic on Davis Drive West

A driver wishing to enter traffic from a side street must be detected by the signal controller and then wait for the signal to switch from red to green before proceeding. Once the signal has changed to allow access to Davis Drive West the motorist can proceed safely, however; there will be a delay to traffic on Davis Drive West as a result of the red indication.

As volumes are low on all side streets included in this assessment, any traffic control signal would display a green indication for Davis Drive West traffic the majority of the time. This continuous green period would not change driver behaviour as they would not be required to stop unless a vehicle on a side street triggered the signals to change. Even a right turning vehicle from any side street will not be recognized by the signal controller unless this vehicle waits a sufficient length of time to receive a green indication in their direction of travel. The typical operation of a traffic control signals will not provide a benefit to Cardinal Golf Club based on the distance to their access point and the low traffic volumes on all side streets.

No one location is better than the other to provide gaps in traffic on Davis Drive West

There is not one municipal intersection on Davis Drive West between Highway 400 and Bathurst Street where introducing traffic control signals would create gaps in traffic for Cardinal Golf Club. Each intersection has been assessed and all have potential to create additional traffic throughout the communities south and north of Davis Drive West and create delay to commuter traffic. Installing traffic control signals at Cardinal Golf Club will provide ease of access to Davis Drive West when they are required.

Should Council wish to consider two traffic control signals on Davis Drive West, it would appear that signalizing Jane Street south/Zander Sod and the entrance to Cardinal Golf Club may provide the solution without major impacts to the community and minimizing the unnecessary delay to commuter traffic on Davis Drive West.

5. FINANCIAL IMPLICATIONS

Currently, Regional policy does not provide for the funding of traffic control signals at private entrances. In accordance with current Regional policy, if the traffic volumes at any municipal intersection on Davis Drive West satisfied 70% of the warrant thresholds, the installation and maintenance costs of traffic control signals would be the responsibility of the local municipality. Once the warrant thresholds are met, 100% of the original installation cost would be reimbursed by the Region. The cost of a typical traffic control signal at a “Tee” intersection is estimated at \$130,000 and the cost for a cross intersection are estimated at \$150,000.

Based on this policy and the estimated costs, the cost to install a traffic control signal at a cross intersection would be \$150,000 with an additional annual operational cost of approximately \$6,000. This additional cost includes the energy cost to operate the traffic control signal and illumination and any necessary maintenance costs to ensure the signals operate as required. As indicated in this and previous reports, traffic control signals do not meet any of the warrants, even at the 70% threshold, at any of these intersections or private entrances on Davis Drive West. Therefore, all costs would normally be the responsibility of the local municipality and/or the private property owner. In accordance with past practice, through the Region, the local municipality and private property owner would be billed for the operational cost.

6. LOCAL MUNICIPAL IMPACT

Introducing traffic control signals at Jane Street South, and at the entrance to Cardinal Golf Club, minimizes the impact to the communities within the Township of King and their local roadways. As Cardinal Golf Club typically generates traffic during off-peak traffic periods, the delay to commuter traffic on Davis Drive West, between the Newmarket area and Highway 400, will be reduced.

7. CONCLUSION

Based on current Regional policy, Regional staff recommended that signals not be installed at any location on Davis Drive West. However, as requested by the Transportation and Works Committee, Regional staff met with representatives from York Regional Police, Township of King, Town of Newmarket, Dalt Hicks, owner of Cardinal Golf Club, and Klaus Zander, owner of Zander Sod on Wednesday, February 27, 2008 to determine the possibility of installing two traffic control signals along Davis Drive West.

Staff considered the benefits of signalizing each location and determined that although they do not meet Regional criteria for signalization, the locations that would least impact traffic into the local communities, maintain driver expectancy and minimize traffic delay on Davis Drive West, were Jane Street South/Zander Sod and the entrance to Cardinal Golf Club.

For more information on this report, contact Brian Harrison, Director, Operations, Roads Branch at extension 5205 in the Transportation Services Department.

The Senior Management Group has reviewed this report.