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HIGHWAY 9
TRAFFIC OPERATIONS REVIEW
TOWNSHIP OF KING

The Transportation and Works Committee recommends the following:

- 1. The deputation by Brenda Baker, resident, Kettleby, Ontario, be received;**
- 2. The recommendations contained in the following report, November 26, 2007, from the General Manager, Roads, be adopted subject to the addition of the following recommendation:**
 - 5. The Regional Clerk forward this report to the Clerks of the Township of King and the Town of Newmarket.**

1. RECOMMENDATIONS

It is recommended that:

1. Staff be directed to proceed immediately to place appropriate signage along Highway 9 advising of applicable penalties for exceeding the posted speed limit.
2. Radar message boards be placed at appropriate locations along Highway 9 to advise motorists of their speed.
3. Staff be authorized to commence the process to rename Highway 9 to Davis Drive West.
4. Staff continue to pursue options to improve the operations of Highway 9, from Jane Street to Bathurst Street, as outlined in this report and report back in February of 2008 on the results and recommendations.

2. PURPOSE

This report addresses concerns raised over traffic operational issues regarding excessive speeds and lack of opportunities to access Highway 9 between Jane Street and Bathurst Street, in the Township of King (*see Attachment 1*). It also identifies immediate opportunities to make operational improvements to enhance roadway safety to assist in reducing the operating speed in this corridor and proposes a plan to consider the physical engineering solutions for improvements.

3. BACKGROUND

At the October 3, 2007, Transportation and Works Committee a resolution was brought forward by the Township of King outlining concerns about increased traffic volumes and speeds on Highway 9, between Highway 400 and Bathurst Street, and potential unsafe traffic conditions on this road corridor.

3.1 Concerns Raised by the Public

In the summer of 2007, two written requests were received from separate business owners on Highway 9 regarding the difficulties their employees and customers have exiting their properties. The concerns raised by the local business owners are:

- High traffic volumes and excessive speeds.
- A lack of gaps in traffic for vehicles turning onto Highway 9 from an intersecting road or driveway.
- A need to signalize intersections along the study corridor (i.e. Highway 9 and Jane Street and Highway 9 and Keele Street) in order to create gaps in traffic.

These property owners felt that since Highway 9 was widened, traffic volumes and collisions have increased substantially.

In recognition of these issues, and to satisfy the concerns of the public, Regional staff conducted the necessary studies and engaged the services of a consultant, Synectics Transportation Consultants Incorporated, to conduct additional independent studies.

3.1 Statistical Information

The Regional Municipality of York took over the jurisdiction of Highway 9 on September 1, 1999. In 2000, a construction project commenced to widen the two-lane section of Highway 9, between Bathurst Street and Highway 400, to a four-lane rural cross section with auxiliary turning lanes.

Prior to the widening of Highway 9, the annual average daily traffic was in the order of 25,000 vehicles per day. Since the completion of the widening, the annual average daily traffic has increased to approximately 40,000 vehicles per day.

Table 1 shows a summary of injury and fatal collisions and property damage only collisions at intersections and between intersections prior to construction and after construction.

Table 1
Collision Summary

	5-Year Period Prior to 2000	5-Year Period After 2001
Collisions at intersections	9 injury and fatal 33 property damage only	6 injury and fatal 18 property damage only
Collisions between intersections	18 injury and fatal 73 property damage only	11 injury and fatal 31 property damage only

Table 1 shows that there are fewer collisions occurring on this roadway since the reconstruction, and that statistically, the road is safer now. In general, since this road was reconstructed, there have been fewer collisions.

It is recognized that although the posted speed limit is 80 kilometres per hour on Highway 9, the average operating speed of traffic is in the order of 100 km/h. The studies completed by staff also showed that there are several vehicles travelling in excess of 120 kilometres per hour on Highway 9. Speed studies conducted by staff, during 2005, revealed that on average, 62% of drivers exceed the posted speed limit while travelling on Regional roads. On this roadway, the non-compliance to the posted speed limit is a source of concern as collisions are more likely to result in injuries and fatalities.

3.2 Photo Radar/Automated Speed Enforcement

On October 19, 2006, Regional Council endorsed a report recommending the Province of Ontario enact legislation to allow municipal police to use automated speed enforcement. Recent information from the Ontario Ministry of Transportation suggests that correspondence be sent to the Honourable Jim Bradley, MPP, Minister of Transportation, to determine the status of photo radar in the Province of Ontario.

Automated speed enforcement has been used successfully by the Cities of Calgary and Edmonton, the Province of British Columbia, and in the countries of Australia and the United Kingdom to reduce operating speeds and to increase safety. However, at this time, automated speed enforcement is not permitted for use within the Province of Ontario.

The Ministry of Transportation conducted an evaluation of their photo radar program when it was in effect. A total of six sites, on provincial highways, were selected and an analysis of the operating speeds at these sites measured a decrease in overall average speed. A similar study in the Province of British Columbia, based on thirty mobile units, also revealed a significant reduction in average operating speeds.

From this information, it is expected that, if automated speed enforcement was implemented, a reduction in the operating speed would occur. It is unlikely that a

sustainable reduction in operating speeds on Highway 9 can be attained using conventional law enforcement methods.

In the past, York Regional Police has indicated potential concerns about the operation of automated speed enforcement. This generally would remove a police officer from their regular duties and make them less visible to the public. Discussions need to take place with York Regional Police on alternate ways to deliver this service.

4. ANALYSIS AND OPTIONS

4.1 Signal Warrant Analysis

Staff applied the current signal warrant analysis, as endorsed by Regional Council, to all intersections within this study corridor, including the private entrance to Cardinal Golf Club and Zander Sod. In accordance with the current signal warrant policy, none of these locations warrant traffic control signals at this time.

To further analyze the warrants for traffic control signals, additional studies were conducted by Synectics using a revised warrant process. This warrant process, not yet adopted in the industry or by Regional Council, allows the use of traffic volumes from a shorter time period, totalling a four hour window, including two hours from each of the morning and evening peak periods. This future warrant also showed that none of the intersections warranted a traffic control signal.

The actual warrant calculations and summaries will be included in the future report in February 2008.

4.2 Access to Highway 9

The major concerns raised by the business owners is the severe delay experienced by drivers making turns on to Highway 9 which is caused by the high volume and speed of traffic and lack of acceptable gaps in the traffic flow. Staff has recorded video observations of the major intersections within the study area and have confirmed that the major streets intersecting Highway 9 experience the same issues. The delay to side street traffic causes drivers to take risks and these risks could result in a severe collision.

4.3 Road Renaming

The name of a roadway can influence driver behaviour. The designation of "Highway" can create a perception that high speeds are acceptable, particularly in conjunction with a rural environment. As Highway 9 is a rural roadway with very little development, motorists drive at a high rate of speed with little need to slow for other traffic. Changing the name of Highway 9, to Davis Drive West, for example, may influence driver behaviour and ultimately reduce the average operating speed of traffic. All references to this road, as a highway, should be removed to help change the driver's perception of the road as a highway, to more of a typical arterial road.

The *Municipal Act, 2001* now permits municipalities to select an appropriate form of notice for changing the name of a highway. At its meeting on June 21, 2007, Regional Council adopted a minimum standard for giving such notice which includes newspaper publication on one occasion and personal notification to affected landowners. This process will be consolidated in a comprehensive notice policy to be presented to Council in December 2007. Because of the number of affected residents and businesses on Highway 9, it is recommended that a public consultation process also be undertaken in addition to these notice provisions. Staff propose hosting public consultation centres to allow affected parties an opportunity to review the proposal and provide input.

4.4 Potential Solutions

In recognition of the concerns raised by the public, and confirmed by the recent studies, a spectrum of possible solutions has been developed. These options range from simple and minor changes, to impact driver behaviour, to major structural changes to the roadway that will ultimately also impact driver behaviour. The spectrum of solutions is listed below:

1. Posting of signage to inform motorists of penalties for speeding and other infractions
2. Place the radar message board to advise motorists of their speed.
3. Place amber flashing beacons in strategic locations to warn motorists of upcoming intersections, driveways and truck turning movements.
4. Road name change: Changing the name from Highway 9 to Davis Drive West will help change driver attitude from highway driving to arterial road driving. All references to Highway 9 should also be removed.
5. Enforcement: Encourage York Regional Police to attend the site on a regular basis and continue the enforcement through the use of aircraft.
6. Discuss the use of automated speed enforcement with York Regional Police.
7. Install centreline rumble strips.
8. Signalize one or more intersections and/or private entrances.
9. Reduce the speed limit.
10. Construct centre median islands at appropriate locations on the road section.

4.5 Analysis of Potential Solutions

Solutions 1 to 3 are engineering solutions that can be implemented immediately. The process for the renaming of Highway 9 to Davis Drive West will commence immediately. This will involve the notification of the residents and businesses, along the stretch of road, about the proposal to rename the road. It will also involve discussions on costs incurred by businesses, in particular, to change their addresses on stationery business cards, etc.

Solutions 5 and 6 will be pursued with York Regional Police. The remaining four solutions, the physical engineering solutions, are solutions that will be addressed in further detail and presented in a future report to Transportation and Works Committee in February 2008. Any solution, such as installing a traffic control signal, must be considered carefully, as they can increase the potential for collisions.

Installing traffic signals at locations that do not meet the traffic signal warrant can result in a reduction in overall intersection safety. Specifically, the installation of traffic 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 signals. Additionally, the average delay to side street traffic is often substantially increased during periods of the day outside of peak hours. Adding traffic control signals also impacts traffic flow on the main street. In order to assess this impact, a computer simulation model, Synchro, will be used. The model will be run under existing conditions (no signals); with one new signal at Keele Street; and with new signals at all three intersections, (Dufferin Street, Keele Street and Jane Street). An analysis will be completed to determine the impacts to traffic under each of the three scenarios. These results will be presented in the February 2008 report.

Arbitrarily lowering the posted speed limit on this road will create a variation in the operating speed along Highway 9, which national studies show will increase the potential for collisions. The road characteristics must be changed before a speed limit reduction is considered.

Solutions, such as the installation of a centre median island may require a public consultation process to obtain input and comments for consideration in future capital programming.

4.6 Action Plan

4.6.1 Immediate Actions

It is proposed that staff proceed immediately with the renaming of this section of Highway 9, to Davis Drive West, remove all references to this section of road as Highway 9, install notification signs for speeding penalties and other driving infractions and place the radar message boards to advise motorists of their speed.

Staff will also review the possibility of installing warning signs and flashing amber beacons to advise motorists of upcoming intersections, driveways and trucks turning. The installation of these signs and flashing amber beacons will be addressed in more detail in the February 2008 report. Recommendations will be included on the use of these devices at appropriate locations along this stretch of road.

4.6.2 Automated Speed Enforcement

Regional staff will work with York Regional Police to determine what legislation is still required to implement automated speed enforcement, if anything. Staff will also evaluate options for permanent automated speed enforcement locations and obtain costs to purchase or lease equipment and implement the program.

4.6.3 Physical Engineering Solutions

The physical engineering options will be reviewed and evaluated by staff and the results and recommendation will be presented in a future report to the Transportation and Works Committee in February 2008. Installing centre-line rumble strips may not have any impact on the operating speed, but they have been proven to reduce cross-over collisions. In effect, they act as a warning device to drivers that drift to the left over the centre line. Traffic control signals are not an effective tool to control operating speeds. They are to control the right-of-way and provide ease of access for side streets.

4.6.4 Reducing the Speed Limit

Studies indicate that lowering speed limits arbitrarily, generally increase the range of speeds on a roadway. This increase in the range of speeds creates the potential to increase the number of collisions and hence decreases safety.

Human factors experience demonstrates that motorists select speeds in response to the physical features of the road, and therefore, speed limits should be consistent with the roadway design. Arbitrarily, lowering the speed limit without making physical changes to the road sends a conflicting message to the driver; the speed limit will not be obeyed, and the burden of enforcement increases substantially.

4.6.5 Centre Median

The installation of a centre median in locations that do not impact the operation of the road would help change the character of the road. Landscaped centre medians have been shown to impact the operating speed on a road by acting as a traffic calming measure. Centre medians are expensive to install and maintain, and should be reviewed through a public consultation process, and evaluated on the cost and benefit of installing the medians.

5. FINANCIAL IMPLICATIONS

The funds to implement the renaming of the road and the installation of signs are minimal and can be taken from the approved 2007 Roads Budget. Any long term solutions associated with this report will be budgeted for, in a future Roads Capital Business Plan and Budget.

6. LOCAL MUNICIPAL IMPACT

Any operational assessment and safety related recommendations that impact the flow of traffic on this road corridor will be discussed directly with the appropriate municipal staff before they are considered for implementation.

7. CONCLUSION

To address concerns raised over traffic operational issues on Highway 9, between Jane Street and Bathurst Street, in the Township of King, it is proposed that staff proceed immediately with the process to rename Highway 9 to Davis Drive West, place appropriate signage on the corridor advising of speeding penalties and the installation of the radar message boards to advise drivers of their speed. Staff will also identify any other opportunities to make operational improvements to enhance roadway safety on this corridor. A report will be provided to the Transportation and Works Committee in February 2008 on the results and recommendations.

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

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause is attached to this report.)