Administrative Report

Office of the Director of Infrastructure Services

To: **Warden McNamara and Members of County Council**

From: **Jane Mustac, P. Eng.**
Director of Infrastructure Services/County Engineer

Date: **Wednesday, March 20, 2019**

Subject: **Speed Limit Review – Various County Roads**

Report #: **2019-0320-IS-R008-JM**

Purpose

The purpose of this report is to provide information and recommendations pertaining to a speed limit revision requests on various County Roads.

Background

The role and function of the County Road Network is to provide the safe and efficient movement of people and goods through the region, providing interconnectivity with the local municipalities. The authority for the County of Essex to set speed limits is provided through the Highway Traffic Act (HTA). Under this legislation the County can set speed limits ranging from 40 to 80 km/h in 10 km/h intervals. The HTA also sets a default municipal speed limit of 50 km/h on roadways within cities, towns, villages or built-up areas and 80 km/h in rural areas.

The spring review of exiting speed limits have been completed by the Infrastructure Services Dept. at four (4) locations, with the locations identified in Appendix A.

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Discussion

A speed limit is the maximum legal speed at which vehicles may travel, but not necessarily the safe speed at which a vehicle should be driven. It is the responsibility of a driver to obey a speed limit and to ensure that the vehicle speed is appropriate for the prevailing circumstances and road conditions, even if that speed is lower than the posted speed limit. Consistency and credibility are very important considerations. If the majority of speed limits make sense to drivers, there is a better chance of getting drivers to react to lower speed limits where there truly are issues of safety requiring lower speeds.

When evaluating individual speed reduction requests on the County Road network, the County reviews current literature including research, guidelines, and field reports to understand the elements of the issue. The major findings of these reviews are:

- The physical environment is a key factor in determining the most appropriate travel speed for a roadway. Controlling elements such as lane width, roadway curvature, presence of parking and sidewalks, and surrounding land uses are critical to creating an environment that promotes lower travel speeds.
- Simply installing a slower speed limit sign has demonstrated that it is **not effective** and that it will have **no effect** on driver behavior.
- It is critical that a road authority apply posted speed limits consistently and without undue influence that is not backed up by solid engineering analysis. Speeds that are set individually for non-technical reasons that are not related to the physical environment will result in disregard for the limits and may in fact decrease overall safety. This causes driver confusion and frustration and may cause the opposite of the intended effect.
- The public must be reminded of their responsibilities through appropriate education and enforcement programs. Although the majority of the burden of creating and maintaining a safe travel environment is the responsibility of the road authority, this does not excuse the public from driving responsibly in all conditions.
- The Transportation Association of Canada's "Canadian Guidelines for Establishing Posted Speed Limits" presents the first standardized approach to setting speed limits in Canada.

The County's Best Management Practice (BMP) for Speed Limits (ECH-R06-12), is attached as Appendix B.

The purpose of the best management practice for establishing speed limits on County Roads is to develop an integrated set of policies, objectives and procedures that will combine to form the basis on when and how to evaluate posted speed limits. The BMP has been developed with consideration given to the current practices of similar municipalities, as well as guidance provided by the TAC Canadian Guidelines. The guidelines sets out a comprehensive engineering criteria for determining the appropriate speed for all classes of roads and considers various physical (road geometry, medians, etc.) and human factors (pedestrian volumes, collision data, etc.). Current best practices for establishing speed limits utilize the 85th percentile speed of the road, based upon the fact that generally the public acts in a safe and appropriate manner. Consistency in the application of posted speed limits on the County Road network is critical in maintaining the validity of and compliance with posted speed limits by road users. Reliable use of engineering standards backed by national and international research, such as TAC's guidelines in combination with reasoned engineering judgment, will result in a safer roadway environment.

The engineering design of the road and the physical environment in which it exists determine the natural and reasonable speed at which motorists will drive. There are numerous elements to the design and land use that help to control the prevalent speed of motor vehicles, some of which include: lane width; presence and width of shoulder or sidewalk; horizontal curvature; vertical alignment; adjacent land uses; number of access points; presence of pedestrians and cyclists; and heavy vehicle percentage.

The other complementary pieces to controlling vehicle operating speeds are Enforcement and Education. Together with Engineering, they make up the "Three Es" of setting and controlling travel speeds. Most guideline documents discuss these elements as being useful complements to good engineering, but they suggest that reliance on either Enforcement or Education is neither practical nor sustainable. Enforcement provides a good reminder to motorists and can help to quickly reduce speeds, but, over time and without a consistent presence, speeds will inevitably return to prior levels. Requiring high levels of enforcement to maintain appropriate travel speeds is not something that most municipalities can sustain, as the cost can be quite significant. Education campaigns also serve as good reminders and can be effective, but they also become expensive and can lose their relevance over time - requiring constant rethinking and re-presentation of similar topics.

TAC's 1999 Geometric Design Guide for Canadian Roads summarizes the above discussion with this excerpt:

"…speed limits set lower [than the design speed] make a significant number of reasonable drivers "illegal" for each 10km/h increment of speed decreased, place unnecessary burdens on law enforcement personnel, lead to a lack of credibility of speed limits and lead to increased tolerance by enforcement agencies".

County Roads function as highways providing connectivity within and beyond the region and the County strives to maintain the highest appropriate rate of speed on all County Roads.

County of Essex – Speed Limit Evaluation Review

The Infrastructure Services Department has been requested to review the existing speed limits on several road sections as described within this report. The roadway characteristics and roadway operational issues were reviewed at the following locations:

Speed Reduction Request #1 – County Road 9 from 8th Concession to CR 7, Lasalle, ON. (Appendix C)

Speed Reduction Request #2 **–** County Road 27 from CP Rail to CR 42, Lakeshore, ON. (Appendix D)

Speed Reduction Request #3 – County Road 31 from CR 34 to CR 20, Kingsville, ON. (Appendix E)

Aerial photographs for each location are included in Appendix C. Pneumatic road tubes, rubber tubes placed across the road lanes to detect vehicles from pressure changes that are produced when a vehicle tire passes over the tube, were installed at each location. These counters record traffic volumes, vehicle speeds and length/classification of vehicles. Each location was also assessed to understand its unique characteristics and how it may be affected by speed. The pre-screening process for each of these requests involved an assessment of data to determine which treatments may be appropriate and most effective at a particular location.

Table 1: Evaluation of Road Segments

Reference ID	**1**	**2**	**3**
Road Name	CR 9	CR 27	CR 31
Segment	8th Conc. Rd to CR 7	CP Railway to CR 42	CR 34 to CR 20
Length of Corridor (m)	1015	1180	1128
Region	LaSalle	Lakeshore	Kingsville
Annual Average Daily Traffic (AADT)	9372	4246	3959
Current Posted Speed (km/h)	80	80	80
85th Percentile Speed (km/h)	92	89	82
TAC Recommended Posted speed (km/h)	80	80	80
Risk Score	43	38	37

A review of the available MVA history does not indicate any special concern.

The intent of the guide is to provide engineers and traffic operations practitioners with an evaluation tool to assess appropriate posted speed limits based primarily on the classification, function and physical characteristics of a roadway.

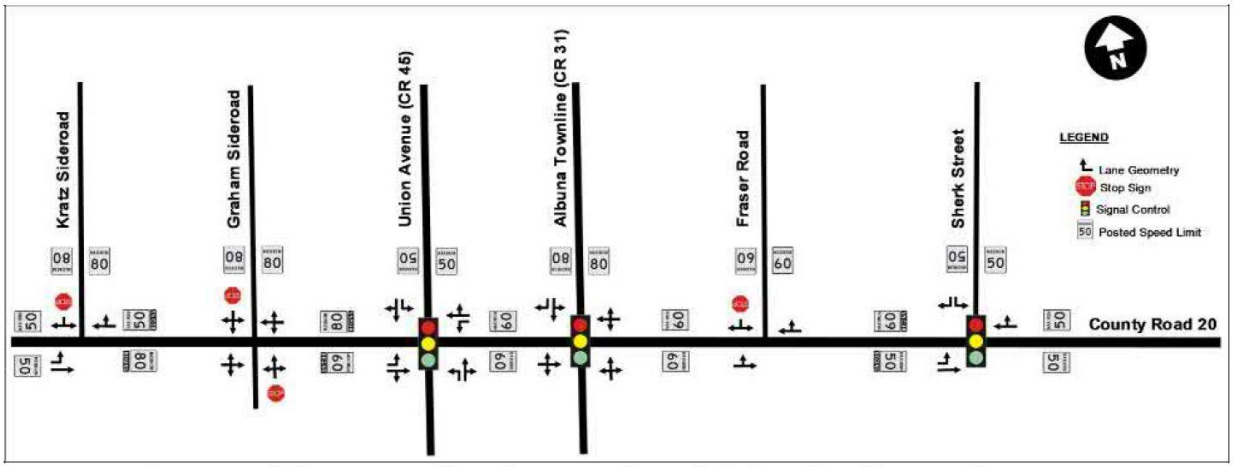
The risks associated with the road determine the appropriate speed limit. The higher the level of risk, the lower the recommended speed limit. Risk points are based on simple Lower / Medium / Higher risk scale according to typical expectations for the specified road class. With consideration of the guidelines recommendations, no reduction in speed limits are supported at this time.

Speed Limit Review as part of an Environmental Site Assessment

The environmental assessment for County Road 20 (Seacliff Drive) from 145m east of Kratz Sideroad to 215m west of Sherk Street was completed in 2018. The posted speed limit is 50 km/h in the vicinity of Kratz Sideroad and increases to 80 km/h approximately 145m east of Kratz Sideroad and County Road 20 intersection. (Appendix F)

The posted speed limit on County Road 20 decreases to 60 km/h approximately 425m west of County Road 45 (Union Avenue) and the County Road 20 intersection. A reduction in the posted speed limit on County Road 20 occurs again approximately 215m west of Sherk Street from 60 km/h to 50 km/h. The existing lane configuration, posted speed limits and traffic control measures within the study area are presented in Figure 1.

Figure 1: Existing Lane Configuration, Posted Speed Limits and Traffic Control Measures



There is a distance of 9.0km between the two 50km/h zones. The speed limit was assessed based on the TAC methodology that follows a two-step process to establish an ideal speed based on the surrounding land use, roadway classification and cross-section then applies reductions based on the level of risk associated with certain physical and road user characteristics.

The findings of the study, as reported in the Environmental Site Assessment report recommended a harmonized approach and proposed that the various speed limits within the study area, should be adjusted to reflect a consistent 60 km/h speed limit between the two 50 km/h zones.

Financial Implications

There are no financial implications.

Recommendation

It is recommended that By-Law 12-2019 be adopted to amend Schedule 'H' of the County Traffic and Parking By-Law 26-2002, to harmonize the posted speed limit on County Road 20 between Kratz Sideroad and Sherk Street as outlined in report 2019-0320-IS-R008-JM.

Respectfully Submitted

Jane Mustac

Originally Signed by

Jane Mustac, P.Eng, Director of Infrastructure Services/County Engineer

Concurred With,

Robert Maisonville

Originally Signed by

Robert Maisonville, Chief Administrative Officer

Appendix No.	Title of Appendix
A	Report Location Map
B	Best Management Practice – Speed Limits
C	Location #1 – County Road 9
D	Location #2 – County Road 27
E	Location #3 – County Road 31
F	Location # 4 – County Road 20