



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, November 18, 2020

Subject: Speed Limit Review – Various County Roads

Report #: 2020-1118-ISD-R033-JM

Purpose

The purpose of this report is to provide information and recommendations pertaining to 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 Infrastructure Services Department typically reviews speed requests bi-annually in the Spring and Fall of each year. Due to the COVID-19 pandemic and the changed behavior in travel in the Spring, only one review was completed. The 2020 fall review of existing speed limits have been completed at four (4) locations, with the locations identified in **Appendix A**.

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 the 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) (dated 2013), 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. These guidelines set out 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 Education, Encouragement, and Enforcement. Together with Evaluation and Engineering, they make up the "Five 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.

Administrative Report

Page 4

November 18, 2020

Speed Limit Review – Various County Roads

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:

- **Appendix C:** Speed Reduction Request #1 – County Road 8 from 6th Conc. North to Short Malden Road, LaSalle, ON.
- **Appendix D:** Speed Reduction Request #2 – County Road 27 from CP Rail to CR 42, Lakeshore, ON.
- **Appendix E:** Speed Reduction Request #3 – County Road 31 from CR 34 to CR 20, Kingsville, ON.
- **Appendix F:** Speed Reduction Request #4- County Road 34 from CR 19 to HWY 3, Tecumseh, ON.

To perform the speed study, pneumatic road rubber tubes and speed radar recorder equipment is placed across the road lanes to detect vehicles from pressure changes that are imposed to the tube or from vehicles length change. 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 roadways physical characteristics are also considered (urban/rural, divided, undivided, # of driveways, etc.)

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 presents the summary of the above assessment which includes some traffic facts, speed study result, TAC based risk evaluation and collision rate result.

Administrative Report

Page 5

November 18, 2020

Speed Limit Review – Various County Roads

More recently, the County has invested in updated and/or new equipment to record, analyze and assist in awareness of speed limits through the following:

- Jamar Speed Radar Recorder, newer technology to analyze the current speed in corridors of concern; and
- Speed Display Trailers visually displaying the drivers speed along corridors for increased awareness to improve driver behaviour; and
- Obtaining annual collision data through MTO database to assist with reduction assessments.

This additional information helps staff make better informed decisions on speed limit reduction and/or recommendations. The County is working on updating the BMP to incorporate the improved assessment criteria (i.e. collision history) to create more stringent criteria for speed reductions.

The intent of the TAC 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.

Rate of Accidents

The department more recently had access to collision data on the road network since 2014. Annual collision statistics are used to:

- Indicate trends;
- Identify driver and vehicle factors in accidents;
- Evaluate current programs and new provincial road safety initiatives;
- Monitor commercial vehicle collisions in accordance with the National Safety Code; and,
- Guide development of new policies and programs to reduce the frequency and severity of traffic collisions in the province.

Accident Rate (AR) is defined as the number of reportable accidents occurring annually on a particular roadway section for every million vehicle kilometres (MVKT) travelled on that section during the same period.

“Reportable Accidents” are those causing any death, injury and/or damage to public assets (i.e. guide rail, utility poles, etc.). A review of the available MVA history at the four (4) locations resulted in relatively low rates.

Administrative Report

Page 6

November 18, 2020

Speed Limit Review – Various County Roads

Table 1: Evaluations of Road Segments

Reference ID	1	2	3	4
Road Name	CR 8	CR 27	CR 31	CR 34
Segment	Short Malden Road to 6th Conc. North	CP Railway to CR 42	CR 34 to CR 20	CR 19 to HWY 3
CSZ/School Zone	Yes	No	No	Yes
Length of Corridor (m)	3680	1180	1128	2400
Region	LaSalle	Lakeshore	Kingsville	Tecumseh
Annual Average Daily Traffic* (AADT)	4821	5009	3419	1504
Current Posted Speed (km/h)	80	80	80	60
85th Percentile Speed (km/h)	91	90	82	73
TAC Recommended Posted speed (km/h)	80	80	80	60
Risk Score	34	39	37	38
Collision Rate (new)	0.25	0.85	0	0.31
Heavy Vehicle Average Percentage	2.00	1.22	3.67	3.94

The methodology is primarily based on the evaluation of risks associated with the physical characteristics of a roadway to 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.

Administrative Report

Page 7

November 18, 2020

Speed Limit Review – Various County Roads

A homogeneous section of roadway is defined as where the land use, road function, horizontal and vertical geometry, cross-section (for example, number of travel lanes, lateral placement of roadside hazards, presence of sidewalks, etc.), traffic volumes, access control, and pedestrian and cyclist volumes are generally consistent from the driver's perspective.

With consideration of the guideline recommendations, and according to the all mentioned on the above, the technical review supports the following recommendations:

- Speed reduction from 80km/h to 60km/h on CR 27 from south of the trail track to CR 42.
- Speed reduction from 80km/h to 60km/h on CR 31 from CR 34 to CR 20.
- A speed reduction is not warranted for consideration on CR 8 from 6th Conc. Road to Short Malden Road.
- A speed limit reduction is not warranted for consideration on CR 34 from CR 19 to Hwy 3.

Tecumseh Resolution

The Town of Tecumseh, in a recent letter dated November 2, 2020 (Appendix G) included the following resolution:

- That the County of Essex be requested to amend the speed limit on County Road 34 from 60 km/h to 50 km/h, from Highway #3 to County Road 19 (Manning Road) within the Maidstone Hamlet Settlement Area;
- And that the County of Essex be requested to designate a School Zone with a speed limit of 40 km/h on County Road 34 for the St. Mary's French Immersion Catholic Elementary School in accordance with Procedure No. ECH-R06-11 (Traffic, School Zone Designation) from the Essex County Highways Best Management Practice Manual;
- And that this Motion and Background be sent to the Clerk for the County of Essex requesting they be placed on the next regular meeting of County Council's Agenda for consideration.

Community Safety Zones

In the past decade, traffic safety practitioners have made significant progress in developing and maturing techniques to more accurately identify locations with the highest potential for improving road safety, diagnosing causal factors, and recommending effective countermeasures.

Administrative Report

Page 8

November 18, 2020

Speed Limit Review – Various County Roads

Some municipalities have developed plans that are structured to best coordinate a diverse set of stakeholders in engineering, enforcement, and education realms, encourage the sharing of resources, and provide the necessary oversight to ensure measures are embedded within the culture of all those managing aspects of transportation in the County.

County Council has designated portions of a County Road as a Community Safety Zone and a by-law that specifies the hours, days, and months that the designation is in effect as per Schedule 'I' in By-Law 26-2002 (as amended).

For the two (2) locations on CR 8 and CR 34, where a speed reduction is not recommended, Community Safety Zones are designated in the general area. It is recommended that signs be updated to reinforce the designation with associated effective time periods.

- CR 34 – From the Hamlet of Maidstone from the east limit of Malden easterly 500 m
 - **Effective time 7:00 a.m. – 5:00 p.m. 7 days per week**
- CR 8 - At St. Thomas of Villanova Secondary School from Canard Drive to Disputed Road
 - **Effective Time 7:00 a.m. – 5:00 p.m. Monday through Friday**
- CR 8 - At Western Secondary School from 650 metres east of the 6th Concession (former Anderdon Township) to 750 metres west of the 6th Concession
 - **Effective Time 7:00 a.m. – 5:00 p.m. Monday through Friday**

Enforcement will be needed during the posted effective time to assist with traffic calming in the area.

In accordance with the Highway Traffic Act, Community Safety Zone designations do not take effect until municipal by-laws are in place and the required signs are posted. The Community Safety Zone signs that are located at the limits of the zone as prescribed in the designating municipal by-law or Ontario Regulation should be re-enforced, with the associated enforcement times, with sign upgrades recommended immediately.

It is also recommended that staff, in consultation with Ontario Provincial Police (OPP), local Police Boards, the local municipalities, and other key stakeholders to review the options for identifying school zones and Community Safety Zones on County Roads in a consistent manner, with a report back to Council in 2021.

Administrative Report

Page 9

November 18, 2020

Speed Limit Review – Various County Roads

Financial Implications

There are no financial implications.

Recommendation

That By-Law 2020-48 be adopted to amend Schedule 'H' of the County Traffic and Parking By-Law 26-2002, to amend the posted speed limit on various County roads as outlined in Report number 2020-1118-ISD-R033-JM.

Respectfully Submitted

Jane Mustac

Originally Signed by

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

Concurred With,

Mary Birch

Originally Signed by

Mary Birch, Director of Council and Community Services,
Acting Chief Administrative Officer

Appendix No.	Title of Appendix
A	Report Location Map
B	Best Management Practice – Speed Limits (2013)
C	Location #1 – County Road 8
D	Location #2 – County Road 27
E	Location #3 – County Road 31
F	Location #4 – County Road 34
G	County Road 34 – Town of Tecumseh Letter