REPORT TO COUNTY COUNCIL

FROM: Brian Lima, Director of Engineering Services

DATE: March 29, 2019

SUBJECT: County Road Speed Limit Adjustment

RECOMMENDATION:

THAT the report titled, “County Road Speed Limit Adjustment”, from the Director of Engineering Services, dated March 29, 2019 be received and filed.

INTRODUCTION:

Speed management is a societal issue that transcends the bounds of engineering and is the act of influencing motorists to adopt speeds that offer mobility without unduly compromising safety. This report summarizes the provincial legislated authority municipalities have in designating speed zone limits, and details the hierarchy and engineering evaluation rational and implications when considering posted speed limit adjustments.

DISCUSSION:

Posted speed limits advise drivers of the appropriate speed at which to navigate a section of roadway safely. Road safety is enhanced through credible posted speed limits that match the expectation of drivers for a given roadway and its surrounding area.

Highway Traffic Act, R.S.O. 1990 Chapter H.8

The authority for municipalities to set speed limits is granted by the Ministry of Transportation Ontario (MTO) through the Highway Traffic Act (HTA). Section 128.1 of the HTA states the following:

128(1) No person shall drive a motor vehicle at a rate of speed greater than,

a) *50 kilometres per hour on a highway within a local municipality or within a built-up area; and,*

b) *Despite clause (a), 80 kilometres per hour on a highway, not within a built-up area, that is within a local municipality that had the status of a township on December 31, 2002 and, but for the enactment of the Municipal Act, 2001, would have had the status of a township on January 1, 2003, if the municipality is prescribed by regulation, unless a by-law is passed under subsection (2), (5) or (6) or a regulation is made under subsection (7) prescribing a different rate of speed.*

Prior to the most recent HTA amendment January 1, 2019, all unsigned major collector or arterial roads in Elgin County had an assumed default speed limit of 80 km/h. These limits do not need to be signed or by-lawed. Through the legislation municipalities can change speed limits and requires that any road with a speed limit other than 50 km/h or 80 km/h be signed and supported by corresponding by-laws. Little information is available concerning the engineering parameters that impact the historical selection of the current County road network posted speed limits. Specifically within the County's rural area, most of the major collector or arterial roads have 80 km/h speed limits with the exception of some more densely populated areas where the speed limits have been reduced.

County of Elgin Roads Plan and Policies

In 2008, F.R. Berry and Associates, and Kirkness Consulting Inc. were retained by then Engineering Services staff to prepare policies regarding functional classification of roads, access to adjacent lands, land development, road setbacks, road system improvements, truck routes, pedestrians, and cyclists; that provided a basic framework for the long term planning of the County Road network. Endorsed by Council on April 28, 2009, these policies served to establish the function of the County roads and protect the right-of-way for future improvements.

Speed limits are influenced by the design and classification of a roadway. In accordance with the latest edition of the MTO's "*Geometric Design Standards For Ontario Highways"*, while reviewing possible speed limits, the first step in evaluating the roads geometry is to select a logical design speed. Design speed is defined as "a speed used for the design and correlation of the physical features of a highway that influence vehicle operation", and as "the maximum safe speed that can be maintained over a specified section of highway when conditions are so favourable that the design features of the highway govern". Further, MTO commonly uses design speeds of 100 km/h for arterial and collector roads and 80 km/h for local roads, in excess of such roads posted at 80 km/h and 60 km/h respectively. The County's policies and design speed selection process to date has mirrored that of MTO's Standards.

The MTO's Standards additionally states that "a design speed equal to the maximum posted speed is accepted where warranted by such factors as low traffic volumes, rugged terrain and economic considerations. This practice would be more appropriate for minor collector and local roads".

Reviewing Speed Limits

When existing posted speed limits are reviewed due to operational or public concerns, engineering studies are typically conducted, and must consider all road users (motorists, pedestrians and cyclists) using a mix of engineering principles and consideration of human factors such as: road characteristics, vehicle operating speeds and volumes, reported collision history, pedestrian and cyclist activity, driveway spacing, location of signalized intersections, roadway and roadside features such as hills, curves and on-street parking, as well as adjacent land use. The process also recognizes that motorists are required to make a series of complex decisions in relatively short time frames, and that motorists' perception of the roadway characteristics is critical in determining the rate of speed they feel comfortable driving.

Artificially high or low posted speed limits have little impact on actual operating speeds and can often result in increased motorist travel time, increased non-compliance, increased driver frustration, and decreased roadway capacity. Conversely, when speed limits are appropriate, there is a decrease in speed variance, a reduction in the instances of aggressive driving, increased credibility for the posted speed limit, and an achieved sustainable balance between positive (e.g. mobility, efficiency) and negative (e.g. environment, collision severity) conditions.

In the absence of a local speed limit adjustment policy, County Engineering Services staff relies on the Transportation Association of Canada's *"Canadian Guidelines for Establishing Posted Speed Limits – December 2009"* and *"Speed Management Guide – February 2016"* which provides engineers and traffic practitioners with objective assessment evaluation tools to assess appropriate posted speed limits based on the aforementioned criteria.

In conducting the engineering studies to review posted speed limits, the 85th percentile speed factor is sometime used as a predominant indication of the appropriate posted speed limit. This represents the speed at which 85% of the motorists are traveling at or below, and is based on the reasoning that drivers are in general reasonable and travel at a speed they feel comfortable with so as to avoid crashes. Collection of such data is obtained over a minimum twenty-four (24) hour period during favourable weather conditions on an average weekday.

The review of driveway and signalized intersection spacing is completed by using the MTO's respective guidelines, while a review of collision history involves a review of data collected over a three (3) year period to determine the average collision frequency, and a view of situations where a reduction of the speed limit might cause rear-end collisions or encourage overtaking manoeuvres by motorists.

Minimum Maintenance Standards for Municipal Highways Implications

Ontario Regulation 239/02, being the Minimum Maintenance Standards for Municipal Highways was amended by Ontario Regulation 366/18, effective May 3, 2018. One of the changes in the amendment has revised the classification definitions as determined by the Average Daily Traffic volume and posted speed limit on a section of road. The table below showcases the recently amended classification of highways:

Average Daily Traffic (number of motor vehicles)	Speed Limit						
	91-100 km/h	81-90 km/h	71-80 km/h	61-70 km/h	51-60 km/h	41-50 km/h	1-40 km/h
53,000 or more	1	1	1	1	1	1	1
23,000 – 52,999	1	1	1	2	2	2	2
15,000 – 22,999	1	1	2	2	2	3	3
12,000 – 14,999	1	1	2	2	2	3	3
10,000 – 11,999	1	1	2	2	3	3	3
8,000 – 9,999	1	1	2	3	3	3	3
6,000 – 7,999	1	2	2	3	3	4	4
5,000 – 5,999	1	2	2	3	3	4	4
4,000 – 4,999	1	2	3	3	3	4	4
3,000 – 3,999	1	2	3	3	3	4	4
2,000 – 2,999	1	2	3	3	4	5	5
1,000 – 1,999	1	3	3	4	4	5	5
500 - 999	1	3	4	4	4	5	5
200 - 499	1	3	4	4	5	5	6
50 - 199	1	3	4	5	5	6	6
0 - 49	1	3	6	6	6	6	6

In accordance with subsection 128(2) of the HTA, should Council elect by by-law to prescribe a rate of speed different on a road section from the rate set out in subsection 128(1) of the HTA that is not greater than 100 km/h, such decision may potentially result in an increased road classification, and reduced response time requirements associated with road maintenance operations and correction of identified deficiencies. Conversely, a reduction in speed limit may potentially result in a reduced road classification, and an increase in response time requirements.

Financial Implications

Adjustments to posted speed limits throughout the County in whole or part are anticipated to have a direct impact on the current Road Maintenance Agreement funding formula that calculates road maintenance allocation payments to the County's member municipal partners.

Additional costs associated with speed warning signage may also be required in accordance with Ontario Traffic Manual Book 5 – Regulatory Signs to provide information to motorists only entering a road section where the posted speed limit is considerably reduced. Maximum speed ahead warning signage must be placed 100 m to 250 m upstream from where a posted reduced speed zone of 20 km/h or more exists. Furthermore, a maximum speed sign with the "begins" legend may also be required to follow.

CONCLUSION:

The HTA allows the council of a municipality, for motor vehicles driven on a highway or portion of such under its jurisdiction, to prescribe by by-law a rate of speed different than set out in subsection 128 (1) that is not greater than 100 km/h, and may prescribe different rates of speed for different times of day.

In response to operational or public concerns associated with speed limits, County Engineering Service staff reference the applicable policies, and recognized provincial standards and Canadian guidelines when reviewing posted speed limit adjustment requests.

Should Council wish to explore posted speed limit adjustments of the County's road network in whole or in part, Engineering Services would need to undertake engineering studies of each applicable road section guided by the applicable MTO Standards and Transportation Association of Canada's guideline evaluation tools, to assess the appropriate speed limits based primarily on the classification, function, and physical characteristics of a roadway.

All of which is Respectfully Submitted

Brian Lima
Director of Engineering Services

Approved for Submission

Julie Gonyou
Chief Administrative Officer