Report to County Council

From: Peter Dutchak, Director, Engineering Services

Date: June 11, 2024

Subject: Plank Road (Vienna) – Speed Management Options

Recommendation(s):

THAT the report titled “Plank Road (Vienna) – Speed Management Options” from the Director of Engineering Services dated June 11, 2024 be received and filed; and

THAT staff work with local municipal staff to install additional roadway speed signage, roadway speed marking and edge line painting on Plank Road within Vienna as discussed in the report. The roadway speed markings are considered a pilot trial and staff will report on their effectiveness at a future meeting.

Introduction:

At the May 14th, 2024 meeting of County Council, staff was directed to provide a comprehensive report investigating a variety of potential traffic safety measures along Plank Road within the Village of Vienna from Edison Street to Oak Street.

This report will also generally discuss speed management options for County road locations through built up areas.

Background and Discussion:

The County of Elgin currently has thirty-nine (39) “built-up areas” as defined by the Highway Traffic Act along County roads. Each of these built-up areas has a reduced speed zone of either 50km/h or 60km/h. In some instances, a 40km/h reduced school speed zone and community safety zone has been established within the built-up area. The County roads within these built-up areas have a functional classification definition of being either an arterial or collector road. These roads have daily traffic volumes that range between 1,000 and 10,000 vehicles, connect urban centres and provide major transportation linkages for commuters, commercial vehicles and agricultural equipment.

Speed management on sections of arterial and collector roads through built-up settlement areas can be challenging. Most often the main road through a settlement area is a County road that serves a dual purpose. Outside of the village or hamlet, the County road provides high-speed travel over long distances in open roadside environments. When the road enters built-up areas, its function adds additional purposes such as to accommodate local access, pedestrians, on-street parking, and the posted speed limit reduces accordingly. It can be difficult to alter driver behaviour, in these shorter "multi-function" sections of County roads.

Traffic calming is broadly defined as introducing measures to restore the road to its intended use. On local roads whose primary purpose is to provide access to adjacent properties, traffic calming measures are intended to increase the motorist's awareness of the street's function, discourage "shortcutting", and minimize conflict with other road users. On collector and arterial County roads through built-up areas, the primary role of the road is to move higher volumes of traffic often travelling to further destinations. Therefore, a balance must be struck so that the road's function is not compromised while maintaining road safety through towns, villages, and hamlets. In this regard, many traditional traffic calming tools are not appropriate for County roads, however some speed management tools are available.

Most municipalities in Ontario including the County of Elgin reference the Transportation Association of Canada's (TAC) – Canadian Guide to Traffic Calming to formulate their policies and govern their actions with respect to implementing traffic calming on roads under their jurisdiction. This manual provides examples of measures used in Canadian municipalities to either calm traffic or manage speeds, and identifies where they are appropriate, their benefits, implications, and potential effectiveness based on identified studies. As previously mentioned, many identified traffic calming measures are not appropriate on County roads due to interference with the road's primary purpose. Examples of inappropriate measures include: vertical deflections (i.e. speed hump), horizontal deflections (i.e. chicane), roadway narrowing (i.e. curb extensions), or access restrictions (i.e. lane diverters or closures). These treatment types would potentially congest traffic, provide obstacles to commercial and agricultural vehicles and promote local roads to be used as by-pass routes.

Treatments that may be appropriate on County roads include: pavement markings (i.e. on-road "signs"), temporary delineators, education (i.e. speed display devices) and enforcement.

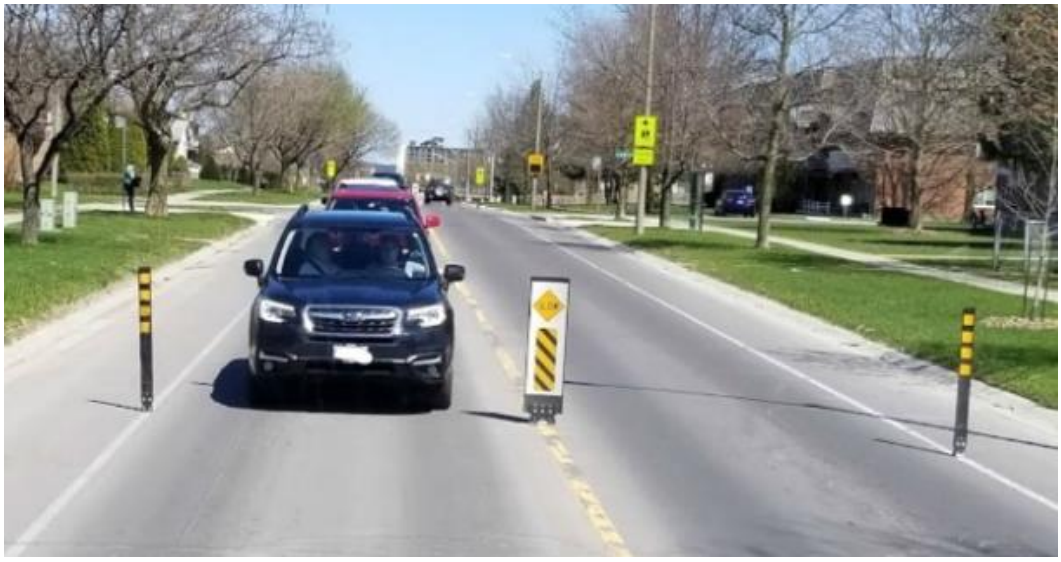
PAVEMENT MARKINGS

The manual provides five (5) pavement marking treatment measures as follows: converging chevrons, dragon teeth, full-lane transverse bars, on-road sign pavement markings and peripheral transverse bars. Of this list, only on-road "sign" pavement markings are identified as being suitable for urban arterial road sections.

On-road “sign” pavement markings provide information that would typically be shown to drivers through signage but are painted on the roadway to provide a larger image, and one that is directly in the driver’s line of sight. For example, “Max 50 km/h” can be painted in the centre of the driving lane at the beginning of a reduced speed zone. The advantages of this treatment are that it has no adverse effects to emergency vehicles, snow plowing, commercial vehicles, agricultural equipment, or vehicle operation. The pavement markings could be easily installed at the approach of any built-up area. However, these pavement markings would not be effective during winter weather conditions and require re-painting every 1 to 2 years at an estimated cost of $500 per location. Based on a 2009 Federal Highway Administration (FHWA) study from Virginia, speeds may be reduced from between 6 and 14km/h from this treatment. It should be noted that these anticipated reductions in operating speed will diminish as drivers become familiar with them.

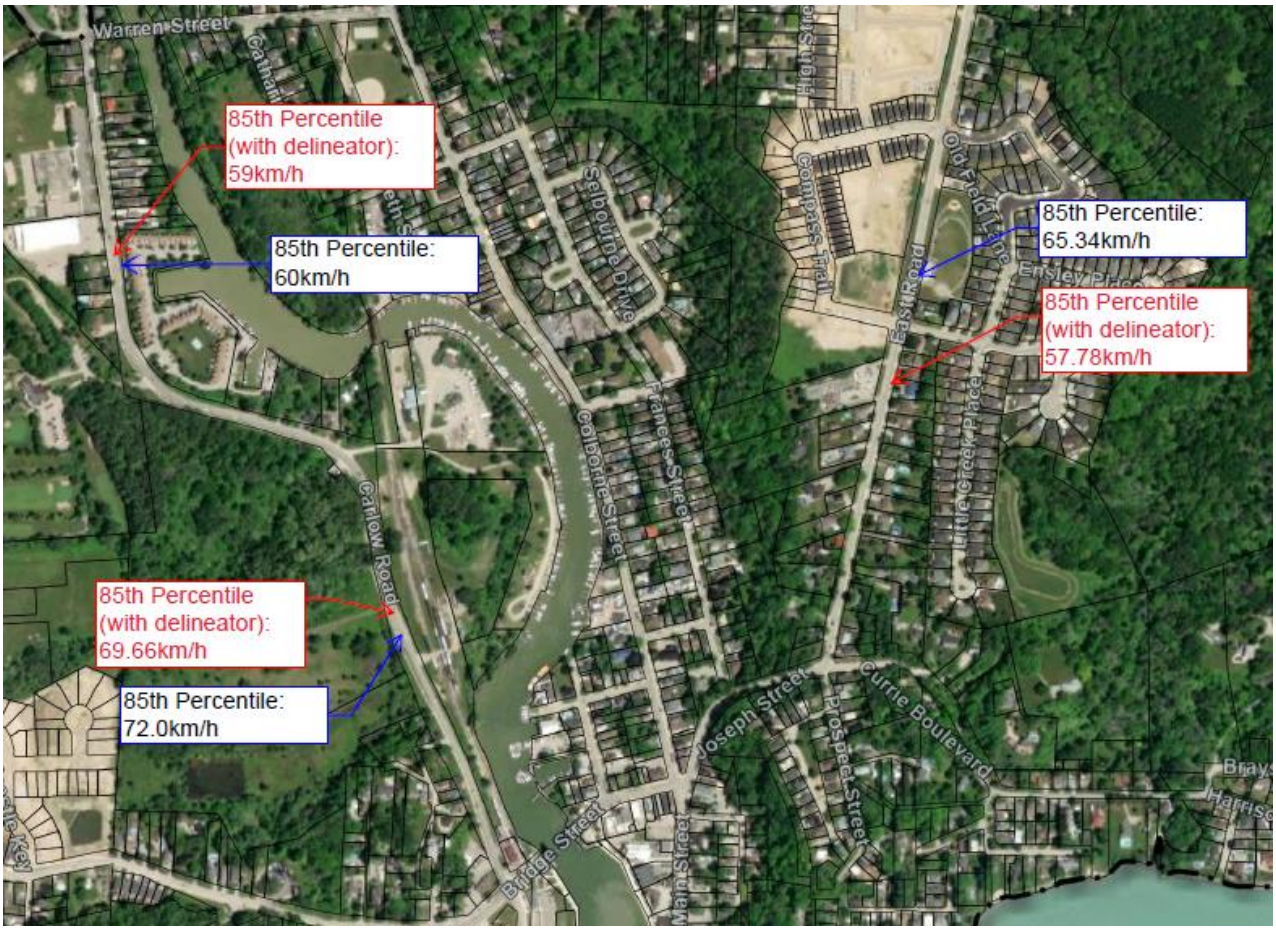
TEMPORARY DELINEATORS

Speed management measures that narrow the roadway for vehicles are intended to increase the driver’s feeling of “confinement”, resulting in reduced speeds. Lane widths can be temporarily reduced utilizing flexible delineators in some urbanized locations where larger commercial vehicles nor agricultural equipment travel. These devices require removal to facilitate winter control and are easily damaged by passing vehicles and therefore require ongoing maintenance.



In September 2022, County Council supported a pilot project initiated by the Municipality of Central Elgin to install temporary flexible delineators on County road locations within the Village of Port Stanley in an effort to reduce operating speeds.

A 2013 Iowa Highway Research Board study found that operating speeds may be reduced up to 5km/h with such treatments. These findings are consistent with data collected from the Central Elgin pilot study during 2023 as shown in the figure below where speeds were reduced between 1 and 7km/h.



SPEED DISPLAY DEVICES

A speed display device is an interactive sign that displays vehicle speeds as oncoming vehicles approach. Vehicle speed is captured using radar and can trigger the display board to show when vehicles approach at predetermined unsafe speeds. A 2012 study from the Iowa Department of Transportation found that these devices may reduce operating speeds from between 3 and 14km/h, however drivers will become immune in the absence of enforcement. Cost per unit is approximately $4,000 and requires ongoing maintenance and management costs.

As an example of their use, the Municipality of West Elgin and the Township of Malahide have purchased these devices and local staff places them at locations temporarily where speed related concerns are received. The OPP has also historically mobilized a similar device mounted to a portable trailer that is deployed across Elgin County to assist in targeted enforcement activities.

ENFORCEMENT

The OPP currently have an ongoing annual public education and awareness program strategically deployed during times of the year and targeted to specific driver behaviours.

County staff has a current practice of addressing speeding concerns received by residents. This practice is triggered by resident concerns, confirmed by county staff with the use of traffic radar counters and communicated to the OPP for their enforcement action. When a speeding complaint on a County road is received, staff deploys its radar traffic counters to the location and obtains detailed traffic data. If the recorded data is found to be in excess of expected ranges, the traffic reports are sent to the OPP so that they may deploy targeted enforcement at these locations as they deem suitable and as their resources permit. Residents who raised the original concern are often visited by OPP staff during enforcement activities. This current practice could be referred to as a “speed watch and targeted enforcement program” that is currently practiced by the County informally and collaboratively with residents and the OPP. Short term behaviour modifications are achieved, however operating speeds will migrate back to historical trends if enforcement activities are not consistently repeated.

AUTOMATIC SPEED ENFORCEMENT (ASE)

In May 2017, Ontario's Highway Traffic Act was amended to introduce the use of ASE in municipalities to address speeding in school zones and community safety zones (less than 80km/h). These permanently mounted or mobile systems are expensive, however private companies exist who provide “turn-key” solutions for municipalities at minimal upfront investment and can receive a portion of the violation revenue. Revenue sharing agreements with vendors vary greatly depending on the volume of infractions issued.

Before ASEs are implemented, several steps need to be taken, as follows:

- Develop and implement a policy for the establishment criteria to determine which School Zones and Community Safety Zones are to receive an ASE.
- Update School Zone and Community Safety Zone by-laws as required.
- Set up an Administrative Monetary Penalty System (AMPS) Program as outlined by the Ministry of Transportation (MTO).
- Enter into an agreement with the MTO and the Ministry of the Attorney General to access the plate registrant information.
- Recruit and hire a local Provincial Offences Officer in accordance with the Province of Ontario guidelines and working under the direction of the County.
- Recruit / appoint a screening officer (Hearing Officer).
- Develop and implement a 90-day public awareness campaign prior to initiating an ASE.

PLANK ROAD TRAFFIC SAFETY MEASURES

As directed by Council, staff has reviewed Plank Road (CR 19) in the Village of Vienna between Edison Street and Oak Street to determine existing operating conditions and recommend options for traffic safety.

A review of police reported collisions since 2013 did not yield any roadway collisions with exception of one deer collision and one parking maneuver collision.

Traffic data was collected between May 15th – 22nd, 2024 where nearly 20,000 vehicles were counted representing an average daily volume of 2,850 vehicles that traveled at an average speed of 54km/h and an 85th percentile speed of 62km/h.

Operating speeds on County roads are typically 10 to 15km over the posted speed limit, and an 85th percentile speed of 62km/h within a posted 50km/h zone is not unusual, however, some improvements can be considered by Council to reduce operating speeds.

Firstly, a white parking zone edge line should be installed to define and narrow the southbound lane width as shown in the image below. Secondly, the existing 50km/h speed zone signs are spaced at their maximum 600 metre spacing per the Highway Traffic Act. Staff suggests additional signs be installed in this vicinity in both directions to remind motorists of the posted speed. And finally, as a pilot trial, “MAX 50km/h” roadway lane markings can be installed near Edison Street and Oak Street as a speed management tool.

Traffic data will be collected after these proposed improvements are installed and staff will report back to County Council at a future meeting with the findings.

Financial Implications:

The County will incur minor operating and maintenance costs to complete the roadway line markings and implement signage as contained in the operating budget for roads.

Alignment with Strategic Priorities:

Serving Elgin	Growing Elgin	Investing in Elgin
☒ Ensuring alignment of current programs and services with community need. ☒ Exploring different ways of addressing community need. ☒ Engaging with our community and other stakeholders.	☐ Planning for and facilitating commercial, industrial, residential, and agricultural growth. ☐ Fostering a healthy environment. ☐ Enhancing quality of place.	☐ Ensuring we have the necessary tools, resources, and infrastructure to deliver programs and services now and in the future. ☒ Delivering mandated programs and services efficiently and effectively.

Local Municipal Partner Impact:

County staff will work with local municipal staff to have the roadway markings and signage installed. The Municipality of Bayham will be requested to install the signage and at the County's expense.

Communication Requirements:

That a copy of this report be sent to the Municipality of Bayham.

Conclusion:

The Transportation Association of Canada's, Canadian Guide to Traffic Calming provides various measures referenced by Canadian municipalities to either calm traffic or manage speeds and identifies where they are appropriate, their benefits, implications, and potential effectiveness. A limited number of measures are appropriate and recommended for use on County roads within built up areas without negatively altering the road's intended function and triggering negative implications. Pavement markings, education and enforcement are three categories of speed reduction measures appropriate for deployment on County roads within built-up areas.

Any of the measures discussed may provide some reduction in operating speeds, based upon available studies and local experience. However, short term behavioural changes may not be sustained without ongoing enforcement.

Staff will continue to implement an urban design methodology during reconstruction projects to ensure a balance is maintained of lowering operating speeds while maintaining the road's primary function.

Staff will work with the Municipality of Bayham to implement some paint marking and signage improvements on Plank Road within the Village of Vienna as discussed in this report and report back to Council at a future meeting discussing their effectiveness.

All of which is Respectfully Submitted

Peter Dutchak
Director of Engineering Services

Approved for Submission

Blaine Parkin
Chief Administrative Officer/Clerk