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Council Report # 2020-113

Title: Hamlet Treatment Pilot Project Recommendations – Cold Springs

Prepared by: Scott Reynolds, Sr. Engineering Technician

Reviewed by: Denise Marshall, P.Eng., Manager, Project Engineering

Mobushar Pannu, P.Eng, M.Eng, Director, TWF

Glenn Dees, Director of Finance/Treasurer

Approved by: Jennifer Moore, CAO

Strategic Plan: Sustainable Growth, Thriving and Inclusive Communities

Council Date: November 18, 2020

Recommendation

“**Whereas** the County undertook a pilot study from 2017-2020 in Cold Springs (County Road 18) and Welcome (County Roads 2/10/74) to determine the best practice for reducing driver speed through various traffic calming measures; and

Whereas several traffic safety measures and devices were implemented in phases, including pavement markings, oversized regulatory signage, radar speed signs and flexible bollards; and

Whereas speed data was collected prior to and after the implementation of each stage, in order to determine the effectiveness of each measure; and

Whereas based on the data collected, feedback from various community groups, the OPP and local residents, the most effective traffic calming measures were the combination of radar speed signs, oversized regulatory signage and pavement markings; and

Whereas funds are available under the annual Transportation Capital Budget for further implementation of traffic calming measures;

Now Therefore Be It Resolved that Council supports staff to continue with the implementation of Phase 1 and Phase 2 traffic calming measures at various locations throughout the County as needed.”

Purpose

The County is looking to implement a consistent and effective traffic calming solution at various locations throughout the County. The purpose of this report is to provide recommendations to Council on how to move forward with the Hamlet Treatment pilot project, given the results of the phased implementation of various traffic safety and calming measures.

Background

Northumberland County had received several concerns and complaints from local residents in Welcome and Cold Springs, regarding the speed of drivers through their community and these were also documented through the development of the Transportation Master Plan (TMP) that was approved by Council in 2017. The TMP recommended that the County develop Hamlet Entry Treatments to calm traffic. Given the number of hamlets throughout the County, it was decided to proceed with a pilot program at two locations to implement, monitor and assess the most effective traffic calming tools that could then be rolled out to other locations.

With the assistance of the consulting firm CIMA+, the County developed a plan to implement increasingly impactful measures in a phased approach, with detailed speed data collection before and after implementation to determine the overall effectiveness of each measure. These phases are detailed below:

Phase 1 – Implementation of Initial Hamlet Treatment (2017)

In May 2017 the County implemented the first phase of traffic calming measures in the Hamlet of Cold Springs, on County Road 18, and at the intersection of County Roads 2/10/74, in Welcome. Initial traffic control measures consisted of pavement markings and replacement of all regulatory speed signage with oversized signs. For both Welcome and Cold Springs, pavement markings included:

- 54m section of peripheral transverse bars. These bars are 0.2 - 0.3m wide by 0.5m in length, spaced at 4-5m at the edges of the lane leading up to the speed transition sign (60km/h)
- 1m x 100m hatched centerline median beginning at the speed transition
- ‘60’ stencils in the driving lane. With one (1) 200m from the speed transition and one (1) at the transition.

Speed data was collected 2 weeks prior and 2 weeks post implementation and this pre and post implementation speed data is detailed in the tables below, with the speeds shown being the **85th percentile**.

Cold Springs: Posted Speed Limit – 60km/h

NB Baseline Speed (km/h)	SB Baseline Speed (km/h)
76.25	81.50
NB Post Treatment Speed (km/h)	SB Post Treatment Speed (km/h)
76.28	80.72
+0.03	-0.78

Welcome Intersection: Posted Speed Limit – 60km/h

NB Baseline (km/h)	SB Baseline (km/h)	EB Baseline (km/h)	WB Baseline (km/h)
81.04	81.90	75.89	79.51
NB Post Treatment (km/h)	SB Post Treatment (km/h)	EB Post Treatment (km/h)	WB Post Treatment (km/h)
79.85	81.15	78.49	80.90
-1.19	-0.75	+2.60	+1.39

Based on this initial data, the speed reductions that were gained were considered negligible, as the majority are less than 1km/h and it appeared that the pavement markings and oversized signage had effectively no impact on the speed of vehicles over the given test period.

Phase 2 – Implementation of Modified Hamlet Treatments (2018/2019)

Due to the apparent minimal impact of the Phase 1 trial overall, as well as some other geometric challenges with the configuration of the Welcome Intersection, it was decided to exclude the Welcome location from the next phases and move forward with Cold Springs being the main pilot location for Hamlet Treatments.

Phase 2 of the pilot project included extending the transverse peripheral bars from 54m to 110m and included a 0.3m wide x 1.0m long bar in the middle of the driving lane in addition to bars at the edges of the lane. The goal was to elongate the section with bars and make them more visible, since feedback from the public was that due to the short length of the bars, most drivers did not have time to notice them let alone reduce their speed before they were through them.

Temporary radar speed signs were also installed at the entry points to the Hamlet with the goal of providing some more visual feedback to the driver. Baseline and post installation speeds were collected to determine the radar signs effectiveness on their own. The radar signs were installed, and data was collected prior to the pavement marking modifications detailed above.

That speed data is detailed in the tables below, comparing the **85th percentile** speeds.

Cold Springs: Posted Speed Limit – 60km/h

NB Baseline Speed (km/h) Radar OFF	SB Baseline Speed (km/h) Radar OFF
74.10	77.9
NB Baseline Speed (km/h) Radar ON	SB Baseline Speed (km/h) Radar ON
70.60	73.7
-3.5	-4.2
NB Post Treatment Mod. Speed (km/h) (No Radar)	SB Post Treatment Mod. Speed (km/h) (No Radar)
71	75
-3.1	-2.9

The average speed reduction during Phase 2 of 3 km/h was an improvement over Phase 1. It should be noted that the overall baseline speed in both the north and southbound directions prior to Phase 2 implementation was approximately 2-4km/h lower than baseline speed prior to Phase 1, indicating that the pavement markings and oversized signage may take longer to have an impact on drivers, and may have been more successful than initially realized. Overall, there was a reduction of 5km/h from pre implementation of Phase 1 to post implementation of Phase 2, with an additional 4km/h reduction when the radar speed signs were active. The County concluded that a combination of pavement markings, oversized signs and radar speed signs may be the best overall option but would wait until after Phase 3 to determine.

Phase 3 - Installation of Flexible Bollards (2020)

The final recommendation from CIMA+ was to further modify the hamlet treatment with the addition of flexible knock-down bollards at the speed transition and throughout the hamlet.

Several flexible knock-down bollards were purchased from a supplier whose products are used in the surrounding Municipalities to help curb speeding issues in similar urban and rural type environments. The bollards were a fiberglass board 1.22m in height and 0.1m wide, anchored into the asphalt surface. The County coordinated with CIMA+ and the supplier to come up with a configuration for the bollards that provide the greatest reduction in speed.

The bollards were placed 20m apart for a distance of 200m at the north and south entry to the Hamlet, along the white edge line. One final bollard was placed on the centerline of the road as you enter the Hamlet to create a pinch-point that would cause cars to slow down. No bollards were installed throughout the Hamlet, as it would be difficult to consistently space them and not interfere with private driveways and sideroads.

Once again speed data was collected 2 weeks before and 2 weeks after installation of the bollards and is detailed below.

Cold Springs: Posted Speed Limit – 60km/h

NB Baseline Speed (km/h)	SB Baseline Speed (km/h)
71.5	75.0
NB Post Treatment Mod. Speed (km/h)	SB Post Treatment Mod. Speed (km/h)
70.0	75.0
-1.5	+/- 0.0

As in the other phases, speed reduction results were negligible. It should be noted that visual observations suggest that the bollards may have been effective in slowing traffic down at the pinch-point, however vehicles would just speed back up and be at their typical speed by the time they were in the middle of the Hamlet.

After seeing the results of the speed data collection and following several complaints from the public about safety concerns and potential damage to vehicles from the bollards (although the County is not aware of any damage that was sustained throughout the pilot), they were removed in the fall of 2020, pushing the Hamlet treatment pilot back to Phase 2.

However, once again the baseline speed remained lower than prior to phase 1, indicating that the initial measures were having an effect over a longer period of time.

Consultations

The County has been in contact with the residents of the Hamlet of Cold Springs throughout the phased implementation of traffic calming measures, as well as the agricultural community, cycling community and the general public overall who commute and travel through these areas on a regular basis.

The County also consulted with the Agricultural Advisory committee throughout the pilot project and there were concerns raised during the implementation of the more physical measures in Cold Springs, about farm vehicles not being able to navigate through the flexible bollards without putting themselves, their equipment or other drivers at risk.

The County has also made an effort to frequently circulate speed data collected at both the Cold Springs and Welcome locations to the OPP, so they can better understand the concerns of residents and identify where there may be opportunities to increase enforcement.

Overall, the County has received both positive and negative feedback from all stages of this pilot and all comments/complaints were documented and taken into consideration with regards to the recommendations below.

Legislative Authority/Risk Considerations

Enforcement of posted speed limits continues to be the responsibility of the OPP in these areas. The County will continue to work with the OPP to identify when there is an issue and when increased enforcement may be necessary.

Discussion/Options

Given the results of the phased Hamlet Treatment Pilot Project, County staff considered the following options for moving forward with traffic calming initiatives for various Hamlets and communities.

1. No further measures – Continue to monitor speeds using the County’s Black Cat radar device, log complaints and pass necessary information onto the OPP and request increased enforcement when required. This option would not require any further Hamlet treatment modifications to pavement marking or signage.
2. Photo Radar – Look into the use of photo radar to deploy at various Hamlet locations to help curb speeding issues. Initial investigations suggest this could be a very costly initiative as photo radar is still relatively new in Ontario. This option would likely take two years to implement as it requires agreements to be in place with the supplier, the joint processing center and others; staff resources to address ticket disputes’ and capital funding to lease the equipment. It would still be recommended to implement the pavement markings and signage as part of this option at hamlet locations.
3. Radar Speed Signs Rotating Schedule –The County could look into purchasing several radar speed signs and utilize them on a rotating schedule in the Hamlets. Due to the visual feedback of the radar speed signs, when initially installed they typically reduce drivers speed by 4-5km/h. They also tend to lose their effectiveness and the reduction of speed the longer they are deployed, which is why the County would place them on a rotating schedule. This would essentially make the most of their effectiveness for a period of time before moving to another location. A single set of temporary radar signs could be deployed at 8-10 hamlet locations throughout the year, ensuring that each location is scheduled for a minimum of two deployments with each deployment last a minimum of two weeks.

These radar signs would be used in combination with the measures from Phase 1 and 2 to achieve the maximum speed reduction. Locations would be prioritized based on the severity of existing speeding issues. More radar speed signs could be purchased over the long term as more locations are added to the priority list as needed. Information and data collected would continue to be passed along to the OPP for enforcement considerations.

It should be noted that further physical traffic calming measures, such as flexible bollards, speed humps/tables are not recommended as the risk posed to the travelling public remains high, given the variety of vehicles that utilize our County Roads (emergency vehicles, tractor trailers, farm equipment etc.), and the wide range of speeds that drivers reach passing through these hamlets.

Financial Impact

Option #1 – Major financial impacts would simply be staff time to deploy Black Cat radar device, download data and pass along to OPP.

Option #2 – Cost is unknown at this time as photo radar is relatively new but is anticipated to be expensive and at least a couple of years from installation/operation in Northumberland County.

Option #3 – Cost Breakdown:

Fixed Costs:

Two (2) Temporary Radar Speed Signs (Rotating Schedule)	\$ 11,000.00
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Fixed Cost Total	\$ 11,000.00

Additional Costs Per Location:

Hamlet Treatment Pavement Markings (Per Location)	\$ 8,000.00
Oversized Regulatory Signage (Per Location)	\$ 1,000.00
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Additional Cost Per Location Total	\$ 9,000.00

The above noted costs associated with implementation of option #3 are available under the annual Transportation Capital Budget.

Member Municipality Impacts

Speeding is an on-going issue throughout the County on both County and member municipality roads. This information will be shared with the member municipalities and it may be advantageous for municipalities to adopt the same or similar treatments through hamlets on municipal roads to ensure consistency across the County to assist with driver expectation.

The County and member municipalities both work closely with the OPP, and Cobourg and Port Hope Police, to address speeding issues, including the use of the black cats to assist the OPP with targeting locations and times for enforcement.

Conclusion/Outcomes

Staff recommends proceeding with option #3 above, given the noted success of the combination of the modified pavement markings, oversized regulatory signage and radar speed signs.

Attachments

N/A