

THE CORPORATION OF THE MUNICIPALITY OF MISSISSIPPI MILLS

STAFF REPORT

DATE: January 31, 2023
TO: Committee of the Whole
FROM: Cory Smith, Director of Public Works
SUBJECT: Traffic Calming Update

RECOMMENDATION:

THAT the Committee of the Whole receive this report for information.

AND THAT Staff be directed to continue to explore new traffic calming solutions for use on in Mississippi Mills,

AND THAT Staff be directed to update and review the Policy for Traffic Calming and Speed Management on Municipal Roads.

BACKGROUND:

Mississippi Mills is a community that is experiencing significant growth. Expansion of our urban areas and densification of our rural areas poses challenges for municipal residents and staff. One of the key concerns in any growing community is always traffic. Mississippi Mills receives several traffic safety and speed concerns reported to staff by residents. In some cases, residents in older areas of the Municipality are experiencing traffic volume increases due to additional growth, and in other cases new areas of growth are experiencing traffic concerns related to construction activities and growth pressures. With Many residents enjoying active transportation activities such as walking, running and riding bikes in our right of ways, safety is always a concern. One of the most common concerns related to traffic safety is concerns related to speeding in Mississippi Mills. Through the years, Mississippi Mills staff have reviewed traffic and speed concerns on an ongoing basis. A traffic and Speed study program has been in place on an ongoing basis for several years where traffic counts and speed data are collected on various roads throughout Mississippi Mills on an annual basis. With over 350 km of Municipally maintained roadways it is not possible to complete traffic and speed studies on each roadway annually. Traffic and Speed Study locations are determined by review of areas of concern (ie. Where concerns have been identified), areas requiring construction or with recently completed construction, areas with current or future development pressure and areas allowing us to extrapolate traffic volumes in the remaining areas. In 2010, Mississippi Mills adopted a Policy for Traffic Calming and Speed Management on Municipal Roads. The policy identified warrants to determine if

traffic calming measures were warranted on a roadway of concern. The policy does not go into great detail about what traffic measures may be implemented. In addition, reviews for reduction in speed limits are completed based on the Transportation Association Guidelines for Establishing Posted Speed Limits. This is not part of the Policy for Traffic Calming and Speed Management of Municipal Roads. Based on the growing number of concerns related to traffic Calming and Speed Management, staff initiated a traffic Calming Pilot Project to review the effectiveness of traffic calming measures in known areas of concern.

DISCUSSION:

Based on the growing number of concerns related to traffic Calming and Speed Management, in 2022, staff initiated a traffic Calming Pilot Project to review the effectiveness of traffic calming measures in known areas of concern. The pilot project reviewed the use of various traffic calming measures including the use of Vertical Centerline Treatments and the Use of Portable Speed Display Signs.

Vertical Centerline Treatments

Vertical Centerline Treatments were used in two locations. The first location (Location 1) was Mill Run subdivision, along Honeyborne, a residential area with an urban cross section. The second location (Location 2) was White Tail Ridge along White Tail Drive and Antler Court being a residential area with a rural cross section. Prior to the installation of the Vertical Centerline Treatments speed and traffic counts were taken in the areas where the treatments were to be installed. The treatments were then installed and traffic and speed data were collected with the devices in place.

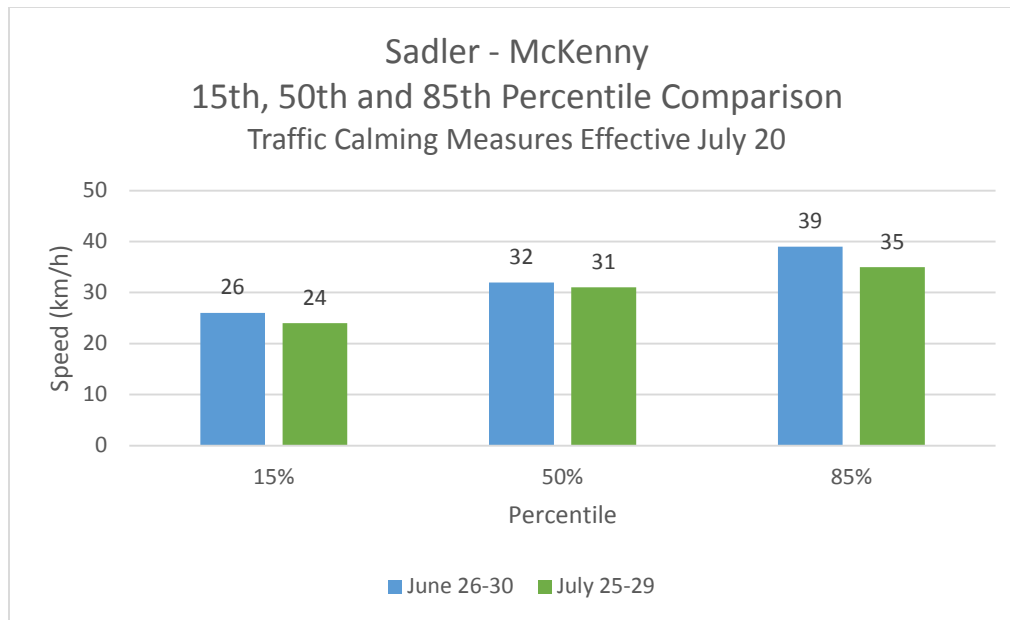
Location 1 had Vertical Centerline Treatments installed in three different locations. The locations were on Honeyborne Between Saddler and McKenny, Honeyborne, Between McKenny and McCabe, and Honeyborne Between McCabe and Horton. Speed Data for Location 1 was monitored in two locations, both before the treatments were installed and during the period of time when the treatments were installed.

See figure below for locations



The data was collected at the same locations both times. The first location the speed was monitored was between Saddler and McKenna. The 15th, 50th and 85th percentile were all reviewed. The 15th percentile is the speed where 15% of all vehicles at that or less than that speed.. The 50th percentile is the speed that 50% of all cars travel at that or less than that speed. The 85th percentile is the speed that 85% of all cars travel at that or less than that speed. The 85th percentile is also known as the prevailing speed.

Before the Installation of the treatments the 15th, 50th and 85th percentile between Saddler and McKenna was 26km/h, 32 km/h and 39 km/h respectively. After the treatments were installed, the 15th, 50th and 85th percentiles were 24 km/h, 31 km/h and 35 km/h respectively. This marked a significant reduction in the prevailing speed.



The second location where the speed was measured along Horneyborne St. was between McCabe and Horton Streets. Before the Installation of the treatments the 15th, 50th and 85th percentiles were 31.7km/h, 25.9km/h and 43.4km/h Respectively. After the Installation the 15th, 50th and 85th percentiles were 21 km/h, 31 km/h and 39 km/h respectively. This also marked a significant reduction in the prevailing speed.

Location 2 had Vertical Centreline Treatments installed in 5 different locations. The locations were on White Tail Drive halfway between the intersection of Antler Court and the 90 degree turn by the mail boxes, halfway between the mail boxes on White tail Drive and the intersection of Antler court at the Northeast end of the subdivision, On Antler Court about 50 m past the intersection of White Tail Drive and Antler Court, about half way down the north/south portion Antler Court between the intersection of White Tail Drive and Antler Court and Antler Court half way down the East/West portion of Antler Court. The traffic and speed data were taken, half way down the north/south portions of Antler Court and White Tail Drive respectively. It should also be noted that subsequent to removing the boulders, the speed limit was dropped to 30 km/h and signs were installed. After the signs were installed marking the new speed limit, a final round of traffic and speed data was taken at the Antler Court location.

See figure below for locations



The speeds measured for the 15th, 50th and 85th percentiles on Antler Court before installation of the treatments were 23 km/h, 35 km/h and 43 km/h respectively. After installation of the treatments the 15th, 50th and 85th percentiles were 16 km, 29 km and 39 km respectively. Upon removal of the treatments and installation of the 30 km/h signage reflecting the reduced speed limit, the 15th, 50th and 85th percentiles were 24 km/h, 29 km/h and 42 km/h respectively. The treatments had a significant reduction in the prevailing speed in this location. Upon the removal of the bouldars and with reduced speed limit of 30 km/h signs installed the speeds returned to pre-treatment levels.

The speeds measured for the 15th, 50th and 85th percentiles on White Tail Drive before installation of the treatments were 32 km/h, 37 km/h and 44 km/h respectively. After the treatments were installed the 15th, 50th and 85th percentiles were 18 km/h, 29 km/h and 37 km/h respectively. This demonstrates a significant drop in the prevailing speed.

Digital Speed Display Sign

A digital speed display sign was planned to be used as part of the 2022 program. Upon initial installation of the sign, errors were occurring. This was primarily related to internal issues with the sign. Due to supply chain issues the parts to repair the sign were delayed. As a result, installation of the Digital display sign was delay. Initial speeds were

taken in early July, due to the supply chain issues, the digital speed display sign was not able to be installed until late October/early November. As a result the data may be slightly skewed as time of year often has affect on the prevailing speed. Late fall speeds can be affected by visibility and road conditions. As a result the speeds represented in this portion of the pilot project are not considered directly comparable to each other and the pilot will be repeated in 2023 at this location to verify results with comparable data sets. It should also be noted that other studies with digital speed signs show a drop in effectiveness over time. Due to the short duration of installation, long term effect could not be assessed.

The speeds measured before installation of the digital speed display sign for the 50th and 85th percentiles at the Blakeney location were 40 km/h and 48 km/h respectively. The speeds measured by the digital display sign during installation for the 50th and 85th percentiles were 33 km/h and 39 km/h respectively. This represents a significant reduction in the prevailing speeds, however as previously noted, these results cannot be considered as directly comparable.

In review of the results the following observations were made;

Vertical Centerline Treatment

1. The Vertical Centerline Treatments were effective, having on between a 10% and 20% reduction on prevailing speed. With residential streets, this is between a 4 and 8 km/h reduction in prevailing speed on average. Taking the prevailing speed down into the 30 – 40km/h range.
2. There were some problems with the Vertical Centerline Treatment
 - a. In residential areas with on-street parking, parking needs to be restricted in the immediate area of the treatments to better allow traffic pass through and not block off larger vehicles.
 - b. Some of the treatments were repeatedly ran over. They are durable, but some had to be replaced. This is thought to be partially related to location of installation, and in some cases it is evident that the treatments were intentionally ran over.
 - c. Some concerns were raised when the initial treatments had the speed limit displayed. This created concern among residents and staff received several inquiries about that. The speed limit was removed from the treatments and this seemed to correct this issue.
3. The treatments based on speed and traffic data were successful, particularly in the White Tail Ridge area. They are reasonably priced and while they may be considered unsightly by some (which was another concern that was raised) the do prove effective for areas where minor reductions are required at a reasonable cost.
4. They do not have electronic components that fail.
5. Easy to replace once damaged
6. They may not be the best option for areas of high levels of on-street parking.

Digital Speed Display Sign

1. Results need to be repeated due to timeline of data collection
2. The Digital Speed Display Sign had an issue with its electronics that caused a significant delay in installation and use. This may translate into long durations the unit being out of commission if issues occur in the future, and due to the cost, spare units are not practical.
3. There was a significant speed reduction as a result of the unit being installed. approximately 10 km/h (Possibly skewed due to time of year). This does show potential for areas where speeds are higher than residential areas, but need reduction for pedestrian safety.
4. Additional review/study is required and will be obtained in 2023.
5. Installation can be difficult due to the requirement of a structure such as a hydro pole being available in a good location to ensure effectiveness.
6. Cost of unit may limit usage

Overall

1. The pilot project is an ongoing project to review different traffic calming options.
2. Both options reviewed in 2022 showed positive results.
3. Additional review and of both options are warranted
4. Future considerations of calming measures planned for 2023 include the use of lane diets (reducing lane width through painting of lines), and audible indicators (using rumble strips perpendicular to lane direction) are planned in addition to the options discussed in this report.
5. Several other roads were reviewed for traffic and speed concerns, the data did not warrant specific reports to council, however all traffic/speed results are made available to the Director of Emergency Services for review and consideration for review with the OPP if warranted.

Policy for Traffic Calming and Speed Management on Municipal Roads

As discussed earlier, in 2010 Mississippi Mills adopted a Policy for Traffic Calming and Speed Management on Municipal Roads. This policy is dated, and does not include options for traffic calming measures to be used. The policy requires updating and should include warrants for use of different measures. The update should include options reviewed in both 2022 and 2023 portions of the pilot project.

OPTIONS:

1. Receive this report for information, and direct staff to incorporate information from ongoing traffic studies, and this pilot project in an update of the
2. Provide staff direction to complete additional reviews not identified in this report.

FINANCIAL IMPLICATIONS:

Funds to continue this pilot project for traffic calming are included in the 2023 budget and are deemed sufficient for those purposes.

SUMMARY:

Staff recommend receiving this report for information and providing direction to update the Policy for Traffic Calming and Speed Management on Municipal Roads.

Respectfully submitted by,

Reviewed by:

Cory Smth,
Director of Roads and Public Works

Ken Kelly,
CAO