

THE CORPORATION OF THE MUNICIPALITY OF MISSISSIPPI MILLS

STAFF REPORT

DATE: November 21, 2023
TO: Committee of the Whole
FROM: Cory Smith, Director of Public Works
SUBJECT: **Traffic Calming and Public Safety Review and Options**

RECOMMENDATION:

THAT Committee of the Whole recommend the following Options to improve traffic calming and pedestrian safety in Mississippi Mills for Council approval:

BACKGROUND:

During the 2023 Budget deliberations, Council passed the following resolution in support of Community Safety and Traffic Calming measures:

Resolution Number 098-23

Moved by Councillor Holmes

Seconded by Councillor Souter

THAT Council to increase the Municipal tax rate to generate an additional \$178,760 of funds for projects related to Community Safety and wellbeing including traffic calming.

AND THAT Staff provide Council with a report on the proposed options.

CARRIED

This report will provide Council with a number of options for consideration based on a review of the opportunities for the use of these funds.

Additional considerations that have been taken into account include: the Transportation Master Plan is being reviewed and updated as part of MM2048, the Municipal Speed Management Policy is under review, and Lanark County is currently in the process of finalizing their Speed Management Policy.

DISCUSSION:

Mississippi Mills has a road network of approximately 360 km of roads owned and maintained by the Municipality. The road network is composed of 196 km of hard surfaced roadways and 180 km of gravel roads. In addition, our road network is connected to County Roads, Provincial Highways and some smaller low traffic private roads. Like many municipalities in Ontario, Mississippi Mills is currently undergoing

growth. Alongside the rise in residential development, there is a noticeable increase in the number of vehicles per household and traveling on municipal roads. As a result, Council is prioritizing identifying measures focused on public safety and traffic calming.

Staff took the following approach when reviewing traffic calming and pedestrian safety in Mississippi Mills: review centered on urban residential roads, rural gravel roads, and high-traffic urban roadways, such as Ottawa Street, where pedestrian usage is significant. This report has broken down traffic calming and pedestrian safety into four key focus areas:

- Traffic-light-controlled intersections,
- Community Safety Zones,
- Urban Residential Traffic Calming, and
- Traffic Calming on Rural Gravel Roads.

Traffic Light Controlled Intersections

Mississippi Mills, oversees and manages two traffic-light-controlled intersections: one situated at the junction of Ottawa Street and Patterson, and the other at Ottawa Street and Saddler. Mississippi Mills is responsible for the ownership and maintenance of several Pedestrian Cross-overs (PXOs), which, for the purposes of this report, will be treated as a sub-category falling under the umbrella of traffic-light-controlled intersections. All considerations and discussions will align with the guidelines outlined in the Ontario Traffic Manuals and the Transportation Association of Canada (TAC) design guidelines as well as compliance with the Accessibility for Ontarians With Disabilities Act (AODA), and Ontario Traffic Manuals.

Details of the two intersections on Ottawa Street:

- located a four-lane road controlled by traffic lights
- speed limit of 50 km/h
- average annual daily traffic (AADT) of 16,000 vehicles
- Equipment is 15 years old (poles, lights and audio)
- Technology using traffic loops in the asphalt (used to adjust timings) – older than 15 years old.

Based on review of the existing status, data and provincial legislation and guidelines, staff are putting forward the following considerations (options and costing will be discussed in later sections of this report).

1. Accessible Pedestrian Signals (APS):

- APS at the intersection, provide audible and tactile indications to assist pedestrians in crossing safely.
- TAC Guidelines for APS installation, consider the specific needs of individuals with visual or auditory impairments.

2. Accessible Pushbuttons:

- Pushbuttons are accessible and meet AODA requirements.
- Tactile indicators on pushbuttons, conform to TAC guidelines, to assist individuals with visual impairments in locating and activating the signal.

3. Extended Pedestrian Crossing Times:

- Signal timings to allow extended pedestrian crossing times, considering factors such as the intersection width, walking speed, and the needs of individuals with mobility challenges are in place, using the current computer and traffic loops.
- TAC guidelines for determining appropriate pedestrian crossing times can be refined and improved with newer technologies. The use of Overhead detection instead of traffic loops and new control cabinets can make refining timing better.

4. Countdown Timers:

- Install countdown timers for both pedestrians and drivers to enhance safety and provide clear indications of the time remaining to cross. Currently our traffic signals do not have countdown timers.
- Follow TAC guidelines for the placement and design of countdown timers at intersections.

5. New Technology for Traffic Signal Timing:

- Explore adaptive signal control technologies that use real-time data to adjust signal timings based on pedestrian and vehicular demand.
- Implement technologies that can refine signal timings dynamically, improving efficiency and safety at the intersection.

6. High Visibility Crosswalk Markings:

- Use high-visibility crosswalk markings to enhance pedestrian visibility and driver awareness.
- Follow TAC guidelines for the design and application of high-visibility crosswalk markings, ensuring compliance with AODA requirements.
- We currently use High-Visibility Crosswalk markings.

7. Leading Pedestrian Intervals (LPI):

- Implement LPI to give pedestrians a head start in entering the intersection before vehicular movements begin.
- Follow TAC guidelines for the appropriate duration of LPI based on intersection characteristics.

8. Regular Maintenance and Monitoring:

- Establish a regular maintenance schedule for accessible features, ensuring pushbuttons, tactile indicators, and signals remain in working order.
- Monitor the effectiveness of accessible features through ongoing assessments and public feedback.
- Several of the push buttons have limited access for persons with disabilities. Improvements to accessibility can be made with additional concrete and asphalt aprons.

Community Safety Zones

Mississippi Mills has five schools within its municipal boundaries: Almonte District High School, Holy Name of Mary Elementary School, R. Tait McKenzie Elementary School, Naismith Elementary School, and Pakenham Public School. While Almonte District High School fronts on Martin street owned by Lanark County, Mississippi Mills has the authority to implement speed control measures, with courtesy permission sought from Lanark County.

Based on review of the existing status, data and provincial legislation and guidelines, staff are putting forward the following considerations (options and costing will be discussed in later sections of this report).

1. Speed Limit Reduction:
 - Consider lowering speed limits in designated school zones, as per Ontario Traffic Manuals guidelines, to enhance safety for pedestrians and cyclists. Many local municipalities use 30 km/h.
 - Minimal Cost
2. Community Safety Zone Signage:
 - Install Community Safety Zone signs in accordance with Ontario Traffic Manuals specifications, providing clear visual cues to drivers that they are entering a designated area requiring heightened caution.
 - Minimal Cost
3. Pavement Markings:
 - Implement pavement markings, such as high-visibility crosswalks and school zone markings, to enhance visibility and reinforce the reduced speed limit.
 - Minimal Cost
4. Passing By-Laws:
 - Enact and enforce passing by-laws within school zones, emphasizing the importance of maintaining a safe and controlled environment for all road users dedicating the areas as a Community Safety Zone and lowering the Speed Limit to 30 km/h
 - Minimal Costs
5. School Zone Flashing Lights:
 - Install flashing lights during school hours, as recommended by Transportation Association of Canada (TAC) guidelines, to further alert drivers to the presence of school zones.
 - Moderate Costs
6. Pedestrian Crossings (PXO):
 - Enhance and clearly mark pedestrian crossings, ensuring they align with TAC guidelines for safe and accessible crossing points.

- Patterson Street currently has a PXO, however not required for Community Safety Zone, simply enhanced markings.
- Minimal Costs

Urban Residential Traffic Calming

Mississippi Mills has an extensive network of urban residential roads characterized by a traffic count of under 400 vehicles per day and a speed limit of 50 km/h. Various traffic calming measures can enhance safety and promote a more livable urban environment.

Based on review of the existing status, data and provincial legislation and guidelines, staff are putting forward the following considerations (options and costing will be discussed in later sections of this report).

1. Chicanes:
 - To be used where there is frequent instances of speeding and the presence of straight uninterrupted road segments
 - Introduce chicanes to create visual and physical deviations, reducing straight-line speed.
2. Road Narrowing:
 - To be used where there is high traffic volume and limited pedestrian infrastructure
 - Narrow the roadway to naturally slow down vehicle speeds.
3. Raised Crosswalks:
 - To be used where there is frequent pedestrian crossings and speed-related safety concerns.
 - Construct raised crosswalks to elevate the pedestrian crossing points and encourage driver awareness.
4. Intersection Realignment:
 - To be used when there is a high frequency of traffic conflicts and suboptimal visibility at intersections.
 - Realign intersections to improve sightlines and reduce potential conflicts.
5. Gateway Features:
 - To be used where there are entry points with speeding concerns and a desire to create a distinct residential environment.
 - Establish gateway features at entry points to signal a transition to a residential zone.
6. Traffic Circles or Roundabouts:
 - To be used when there is frequent traffic congestion and a desire for a continuous traffic flow.
 - Introduce traffic circles or roundabouts to regulate traffic and reduce speeds.

7. Enhanced Signage and Pavement Markings:

- To be used when there is difficulty in discerning speed limits and frequent traffic violations.
- Install clearer signage and pavement markings to convey speed limits and promote adherence.

Traffic Calming on Rural Gravel Roads

The municipality's rural gravel road network consists of approximately 180 km of gravel roads with widths varying between 5 and 7 meters. When considering traffic calming options for rural gravel roads it's important to focus on measures that enhance safety without compromising the functionality of these roads.

Based on review of the existing status, data and provincial legislation and guidelines, as well as information shared by the public, staff are putting forward the following considerations (options and costing will be discussed in later sections of this report).

1. Speed Limit Reduction:

- Implement reduced speed limits appropriate for gravel roads, considering the road geometry, land use, and traffic characteristics.
- Refer to the Ontario Traffic Manual and the Municipal Speed Management Policy for guidance on setting speed limits.

2. Traffic Calming Signage:

- Install traffic calming signs such as "Reduce Speed," "Watch for Wildlife," or "Narrow Road Ahead" to alert drivers to potential hazards.
- Comply with the Ontario Traffic Manual for the design and placement of traffic signs.

3. Gateway Features:

- Introduce gateway features at the entrances to rural communities or areas with specific safety concerns to visually signal the need for reduced speeds.
- Adhere to design guidelines for rural gateways.

4. Create a narrowing effect:

- Strategically place roadway alignment changes, signage, or natural features along the roadside to create a visual narrowing effect, encouraging drivers to slow down.

5. Variable Message Signs (VMS):

- Use portable VMS to display dynamic messages, such as speed advisories or cautionary information, based on road conditions or events.
- Follow applicable guidelines for the use of VMS in rural areas.

OPTIONS:

The table below provides options under the four key focus areas, the intention is that Committee of the Whole will select options for Council approval.

Traffic Light Controlled Intersections		
Option	Details	Recommended
1. Install Campbell AODA “Wave” Push button	current push buttons require physical contact and close proximity. People with a disability have easier access to a “Wave” Pushbutton and do not require physical contact or close proximity.	Yes
2. Install New Pedestrian Signal Heads	New Signals will include square pedestrian heads and countdown timers	Yes
3. Upgrade Loop Detection	New overhead detection is a non-intrusive installation, flexibility in lane configuration, reduced maintenance costs, improved detection accuracy, better performance in inclement weather, and adaptability to smart city technologies. In contrast, loop detection is characterized by its lower initial cost and the familiarity associated with being a proven technology, with the ultimate choice between the two methods hinging on intersection requirements, budget constraints, and preferences for advanced features	Yes
4. Change out control cabinets	Upgrade to newer cabinets with compatibility with new computer technology. Our current cabinets are out of date and limit some refinements available on the market today	Yes
5. Improve access to push buttons	Install new concrete and asphalt aprons to improve existing access is limited for people with disabilities being behind uneven surfaces, grass and other obstacles.	Yes
6. Relocate one downtown PXO to King Street	Currently no PXO on King Street for a safe crossing for students.	Yes

Community Safety Zones		
Option	Details	Recommended

7. Implement community safety zones around all schools.	Areas around schools warrant priority due to the high volume of vulnerable road users.	Yes
8. Additional community safety zones	Areas beyond school zones may also be identified as a community safety zone.	Not until completion of Transportation Master Plan

Urban Residential Traffic Calming		
Option	Details	Recommended
9. Implement mix of measures if warrants are met (ex: high traffic violations or lack of visibility, etc.)	Measures should be tailored to the unique characteristics of each road segment, considering local traffic patterns and community preferences. Consideration for use of these measures in alignment with Complete Street Considerations should be used during design of new roadways.	Not until completion of Transportation Master Plan

Traffic Calming on Rural Gravel Roads		
Option	Details	Recommended
10. Implement a mix of measures for rural gravel roads.	Options should be tailored to the unique characteristics of each road segment, considering local traffic patterns and community preferences. Consideration for use of these measures in alignment with Complete Street Considerations should be used during design of new roadway.	Not until completion of Transportation Master Plan

Additional Considerations		
Option	Details	Recommended
11. Invest in additional equipment for data collection.	Purchased additional equipment and measuring devices in order to collect data to inform if certain measures are warranted.	Yes

*Transportation Master Plane expected completion date Q1 2024. The Speed Management Policy for Lanark County is in draft form and a Steering Committee has been established for review and amendments. The Mississippi Mills Speed Management Policy will be developed after the Transportation Master Plan is completed.

FINANCIAL IMPLICATIONS:

The table below outlines the estimated cost per option.

Option #	Cost
Options 1-5. Traffic Light Upgrades for both intersections	\$150,000.00
Options 1-5. Traffic Light Upgrades for only one intersection on Ottawa St	\$75,000.00
Option 6. Relocate PXO to King St.	\$22,000.00
Option 7. Community Safety Zones (School zones)	\$12,500 per location Total \$50,000.00
Option 11. Additional Equipment	Remaining balance of the total \$178,760 allocated in budget 2023.

Other options identified in this report will be considered as part of the Municipality’s Transportation Master Plan and an updated Municipal Speed Management Policy which are expected to be completed in Q1 2024.

STRATEGIC PLAN

- 1) Safe and Sustainable
Enhancing traffic calming contributes to a safer and more sustainable community.

- 2) Welcoming, Inclusive, Active and Healthy Community
Improved road safety fosters an active and healthy community.

- 3) Modern Efficient and Effective Municipal Operations
Implementing best practices in traffic calming reflects modern and efficient municipal operations.

SUMMARY:

This report identifies options for considerations for the implementation of enhanced traffic calming measures in identified areas, including community safety zones, controlled intersections, and residential streets with low AADT. The options are in line with established guidelines and best practices, contributing to a safer and more sustainable municipality.

Respectfully submitted by,

Reviewed by:

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