



**INFRASTRUCTURE SERVICES
TRAFFIC CALMING POLICY**

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Section 1 – Introduction

1.1 Purpose

The purpose of this policy is to provide staff with a guideline and procedure for the initiation, investigation and implementation of traffic calming measures for roadways within the Township of Wilmot. This policy also ensures that there is a formal process defined by which all sites/traffic calming requests can be evaluated against using consistent screening and criteria.

Note: This Policy does not apply to arterial roads, as they are intended to serve higher traffic volumes. The Policy also does not apply to roads within Region of Waterloo jurisdiction.

The purpose of this policy is to provide a framework for initiating, developing, assessing, implementing, and monitoring traffic calming measures for local and collector roads in the Township of Wilmot. The purpose of traffic calming is to address concerns about the behaviour of motor vehicle drivers and develop measures to mitigate the concerns resulting in safer roads for all modes of transportation. Creating a policy allows the Town Staff, members of Council and the public to agree on an approach and criteria that can be used objectively to respond to and prioritize requests.

1.2 Objective

The goal of traffic calming is to address the negative effects of motor vehicle use and driver behaviour. Most traffic calming measures address speeding, reckless driving, cut through traffic and conflicts between street users. The objective of implementing a traffic calming policy is to determine the best combination of measures that result in the greatest improvement in the quality of life and community safety at a reasonable cost.

1.3 Street Classification

The Township of Wilmot's Official Plan includes three road classifications: local, collector, and arterial roads. A road's classification is an indication of its purpose and also the range of traffic volumes it can be expected to carry. The primary function and the purpose of the road should be maintained when considering the implementation of various traffic calming measures. Many traffic calming policies in the past have excluded arterial roads and restricted collector roads to only certain types of measures. However, with the 2018 update to the Transportation Association of Canada (TAC)/Institute of Transportation Engineers (ITE) manual, there are now traffic calming measures that are considered suitable for arterial roads.

Local and collector roads are intended to provide access to properties or to connect local roads to arterial roads. These roads typically have lower volume and speed. Arterial roads are designed to efficiently move and distribute traffic across the network, including goods movement and emergency vehicles, and any traffic calming measures that interfere with this function would not be recommended. For these reasons, it is important to carefully apply the right traffic calming measures to address the specific problem, based on the road classification.

Arterials: A road primarily for through traffic

	Rural Arterial	Urban Minor Arterial
Service Function	Traffic movement	Traffic movement
Land Service	Secondary consideration	Some access control
AADT	<12000 AADT	5000 - 20000
Flow Characteristics	Uninterrupted flow: except at signals and roundabouts	Uninterrupted: except at signals, roundabouts and crosswalks
Average Running Speed	60-100 km/hr	40-60 km/hr (off-peak)

Collectors: A road on which traffic movement and access have similar importance

	Rural Collector	Urban Residential Collector
Service Function	Traffic movement & land access of equal importance	Traffic movement & land access of equal importance
Land Service	Traffic movement & land access of equal importance	Traffic movement & land access of equal importance
AADT	<5000 AADT	<8000 AADT
Flow Characteristics	Interrupted flow	Interrupted flow
Average Running Speed	50-90 km/hr	30-70 km/hr (off-peak)

Local: A roadway with the primary function of providing land access

	Rural Local	Urban Residential Local
Service Function	Traffic movement is a secondary consideration	Traffic movement is a secondary consideration
Land Service	Land access consideration	Land access primary function
AADT	<1000 AADT	<1000 AADT
Flow Characteristics	Interrupted flow	Interrupted flow
Average Running Speed	50-90 km/hr	20-40 km/hr (off-peak)

Region of Waterloo roadways:

Concerns related to the roadways which are under the jurisdiction of The Region of Waterloo will be directed to The Region of Waterloo.

Section 2 – Traffic Calming

2.1 What is Traffic Calming?

Traffic calming is defined as the combination of mainly physical measures that alter driver behavior to reduce the potential of negative effects of motor vehicle use and improve conditions for alternate modes of transportation. Traffic calming measures combined with engineering, educational and enforcement tools, can significantly improve the safety of neighbourhoods and related roads.

2.2 TAC's Canadian Guide to Traffic Calming 2018

TAC and ITE jointly updated the 1998 Canadian Guide to Neighbourhood Traffic Calming and have published the Canadian Guide to Traffic Calming 2018 (CGTC). A group of professionals and associations contributed to the update to the 1998 Guide based on their experience from many more municipalities and current best practices. The CGTC is intended to be used as a national guideline, and the review of the CGTC is to assist Wilmot in developing its own policy and use it as a reference to educate elected officials and the general public. Wilmot's policy conforms to the guiding principles and follows the process recommended in the CGTC and much of its content is good background to the subject.

The following sections summarize relevant contents from TAC's 2018 Canadian Guide to Traffic Calming that are considered when developing a traffic calming plan.

2.3 Overview

Traffic calming is used to maintain the road's intended function while keeping the safety of all road users at the forefront. Two main causes that may elicit the need for traffic calming to be considered are excessive speeding and traffic short-cutting / infiltration. Depending on the cause of the issue, the location, and the desired results, the proposed measures should reflect the objective. Some traffic calming measures are more effective at controlling speed, for example, and others might be intended to deter traffic from using a particular street. There are various types of traffic calming measures but largely divided into physical measures that require alteration of physical attributes of the roadway and passive measures such as enforcement and educational/awareness programs.

Some traffic calming measures are more suitable in certain locations than others. In the past, traffic calming was designed and implemented primarily in residential neighbourhood areas as noted by the first edition of TAC/ITE's guide title of Canadian Guide to Neighbourhood Traffic Calming. The updated edition now takes into consideration not only local and collector roads but also arterials roads. This addition however includes provisions that the objective and the approach be different than local and collector roads to make sure that the function of arterial roads is not hindered.

Restriction and diversion of traffic flow are not recommended on arterial roads. In addition, the area type (rural or urban) is an important factor to consider when choosing traffic calming measures.

One of the main objectives of traffic calming is to increase the safety of the road users. Decreasing the operating speed of vehicles and volume of traffic and heightening the awareness of other street users can reduce conflicts between road users. However, traffic calming measures require appropriate signage and pavement marking to ensure all users know how to use the road safely.

2.4 Objectives of Traffic Calming

To address undesirable traffic conditions such as conflict between road users, poor sight lines, speeding and excessive volume on local and collector roads, the specific objectives of traffic calming and this guide are to:

A. Increase the Safety of Neighbourhoods

Through the use of physical measures to alter driver behavior, traffic calming can improve safety on neighbourhood streets. The resulting reduction in volume and speed will create a safer environment for all residents including pedestrians and cyclists.

B. Improve the Livability of Neighbourhoods

Traffic calming is intended to uphold and restore the livability and sense of community within neighbourhoods by minimizing the volume and speed of through traffic. As a result, negative impacts from traffic such as excessive noise, air pollution, visual presence of numerous vehicles, and potential safety hazards are minimized. In addition, attractively designed traffic calming measures can enhance the aesthetics of a neighbourhood and improve streetscapes.

C. Restore Streets to Their Intended Function

The intended function of a local road is to accommodate low to moderate volumes of traffic travelling at lower speeds in and out of neighbourhoods or from points of origin to the collector road system. Local roads provide direct vehicle access to residences that typically front onto these roads. Through traffic should be discouraged from using local roads.

D. Maintain Access Routes for Emergency Services, Public Transit & Maintenance Services

The potential impacts to these services have been considered in the development of this guide and will continue to be considered throughout the implementation of traffic calming measures. The needs of these services will be balanced against the need to slow and/or reduce traffic. In addition, this guide outlines the process through which all potentially impacted services will have the opportunity to comment on any proposed plans before implementation.

E. Promote Public Participation & Community Support

Traffic calming measures have a direct impact on neighbourhoods and the residents living in them. As such, an integral part of the process includes resident communication and feedback. Good community involvement leads to solutions to specific local traffic issues. Effective communication with residents provides staff with the opportunity to explain to residents the benefits of traffic calming measures while deterring them from less effective countermeasures.

2.5 Advantages & Disadvantages

General advantages and disadvantages of traffic calming measures are outlined below:

Advantages

- Reduce motor vehicle speeds
- Reduce traffic volume
- Discourage through traffic
- Improve overall road safety
- Improve neighbourhood livability
- Reduce conflicts between road users

Disadvantages

- Increase emergency vehicle response time
- Reduce ease of access in and out of neighbourhoods
- Result in expensive solutions (time and resources)
- Divert traffic onto neighbouring roads
- Increase maintenance time and costs (e.g. snow clearing, garbage pick-up)

3.0 Traffic Calming Measures

As per the Institute of Transportation Engineers (ITE) Traffic Calming: State of the Practice, physical traffic calming measures are classified as either speed control measures or volume control measures. In addition to physical measures, there are also non-physical measures. This section outlines the measures that will be considered under this policy.

3.1 Physical and Non-physical Calming Measures

3.1.1 Speed Control Measures

Speed control measures are intended to reduce travel speeds and may include:

- Speed bumps / humps (rounded, raised areas placed across the roadway).
 - Not to be considered unless upon urban curb and gutter streets
 - Not to be considered in winter months
 - Could be considered in school zones
 - Consider through trial periods only with community feedback
- Speed tables (flat-topped speed humps).
- Raised intersections (flat raised areas covering entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section).
- Traffic circles (raised island, placed in intersections, around which traffic circulates);
- Roundabouts (larger than traffic circles and typically have raised splitter islands to channel approaching traffic to the right and are used on higher volume streets).
- Chokers (curb extensions at midblock locations that narrow a street).
- Realigned intersections (changes in alignment that convert T-intersections with straight

approaches into curving streets that meet at right angles).

- Neck downs (curb extensions at intersections that reduce roadway width curb to curb); and
- Centre island narrowing (placement of a raised island located along the centreline of a street that narrows the travel lanes at that location).

3.1.2 Volume Control Measures

Volume control measures are less likely to be implemented, however, are intended to reduce traffic volumes and include:

- Full or partial street closures (full street closures are barriers placed across a street to close the street completely to through traffic, usually leaving only sidewalks or bicycle paths open, whereas half closures are barriers that block travel in one direction for a short distance on otherwise two-way streets).
- Diagonal diverters (barriers placed diagonally across an intersection blocking through movement).
- Median barriers (raised islands located along the centreline of a street and continuing through an intersection to block through movement at a cross street); and forced turn islands (raised islands that block certain movements on approaches to an intersection).

3.1.3 Non-Physical Measures

Non-physical traffic calming measures are usually implemented through enforcement, signing and pavement markings. Such measures include:

- Speed enforcement (police enforcement).
- Pavement marking legends (e.g. painted speed limit on pavement, etc.).
- School zones (signage and pavement markings).
- Transverse lane markings (transverse bars or chevron pavement markings on a travel lane).
- Lane narrowing and shoulder widening through pavement marking.
- Radar speed display signs; and
- Community Safety Zones, where applicable.

3.1.4 All-Way Stops

It is important to note that stop signs are not to be used for speed control. In accordance with the Ministry of Ontario (MTO) Traffic Manual Book 5 (Regulatory Signs) unwarranted stop signs increase vehicular speeds between stop signs and encourage rolling stops (stop signs only affect speeds within approximately 40 meters of the stop sign). An excessive number of stop signs, particularly those that are not warranted, encourage disrespect for stop control signs and other traffic control devices.

Municipalities are often faced with requests for all-way stop control as a means to address speeding concerns. However, traffic engineering standards including the Ontario Traffic Manual (OTM) clearly indicate that stop signs are means of controlling the right-of-way at intersections, and not a tool to address speeding. These standards include warrants for all-way stop control based on intersection volume and safety. Compliance at unwarranted stop signs has been found to be lower than warranted locations because drivers perceive that there was no reason to stop and often tried recover lost time.




3.2 Staging of Measures

Staging calming measures is recommended in the process of implementing traffic calming to ensure effectiveness of operating the program, including cost-effectiveness. Type 1 measures are considered flexible and responsive to the needs of the request and can be considered lower cost to implement in a shorter time period. Type 2 measures typically have a higher impact and need more time and resources to assess impacts before proceeding. Type 1 measures could be installed prior to considering if Type 2 measures would be warranted further.

3.2.1 Type 1 Measures

Type 1 traffic calming measures are effective methods to address concerns through less-intrusive road changes when permanent physical road geometry changes are not possible or recommended. These passive measures are typically lower in implementation cost and have a shorter turnaround time for the evaluation period, allowing the Town to address more requests with the given funding and resources. Type 1 traffic calming measures are shown in Table 1.

Table 1: Traffic calming measures use in Wilmot

Traffic Calming Measure	Example	Considerations Description
<p>Road Diet</p> <p>Reconfiguration of a road by reducing the number of vehicle lanes to allocate the reclaimed space for other uses (sidewalks, bus lanes, bike lanes, parking)</p>		<ul style="list-style-type: none"> - Reduces vehicle speeds and conflicts - May affect emergency vehicle response times due to added congestion
<p>Speed Display Devices</p> <p>Interactive sign that displays vehicle speeds as oncoming motorists' approach</p>		<ul style="list-style-type: none"> - Reduces speed and conflicts - If not enforced, drivers may become immune - An estimate of volume data can be collected
<p>Lane Narrowing</p>		<ul style="list-style-type: none"> - Reduce speeds and heightened awareness - Opportunity to redistribute roadway right-of-way for other road users - No construction required



3.2.2 Type 2 Measures

Type 2 traffic calming measures typically result in more effective solutions as the physical changes to the road require the drivers to reduce their speed. The three categories of Type 2 measures are vertical deflection, horizontal deflection and access/volume control.

Vertical Deflection

Vertical deflections are physical obstructions for vehicles to traverse. The vertical height difference is designed to cause drivers that are driving above the speed limit discomfort to slow down. Certain drivers may reroute their travels to avoid these neighbourhood calming areas, achieving traffic diversion. Vertical Deflection measures are shown in Table 2.

Table 2: Vertical deflection traffic calming measures

Traffic Calming Measure	Example	Considerations Description
<p>Speed Hump / Speed Table (intersection)</p> <p>Vertical deflection designed to accommodate the desired operating speed.</p>		<ul style="list-style-type: none"> - Reduces speed and volumes - Affects emergency vehicle response times and transit routes
<p>Speed Cushion</p> <p>A raised area on a road similar to a speed hump but does not cover the entire width allowing for large vehicles (bus, fire truck) to straddle the cushion without difficulty.</p>		<ul style="list-style-type: none"> - Reduces vehicle speeds and volumes - May slightly affect emergency vehicle response times and transit routes but not as much as speed humps - Requires removal in the winter

Horizontal Deflection

Horizontal deflection traffic calming measures narrow the road to encourage vehicles to slow down and accommodate other roadway users. These types of measures are effective on roadways with straight geometry for extended length and at areas with high volume of pedestrians and cyclists. Horizontal deflections shown in Table 3.

Table 3: Horizontal deflection traffic calming measures

Traffic Calming Measure	Example	Considerations Description
<p>Curb Extensions</p> <p>A horizontal intrusion of a curb into the roadway resulting in a narrow section of roadway.</p>		<ul style="list-style-type: none"> - Reduces vehicle speeds and conflicts through shortening the crossing distance for pedestrians - Not compatible with bike lanes - Potential loss of on-street parking
<p>Traffic Circle</p> <p>Form of intersection control requiring through traffic to manoeuvre around the centre island.</p>		<ul style="list-style-type: none"> - Reduces speeds, volumes, and conflicts - Delays emergency vehicle response times - Not suitable for high pedestrian locations
<p>Raised Median Island</p> <p>An elevated medium constructed on the centerline of a two-way roadway to reduce the overall width of the adjacent travel lanes</p>		<ul style="list-style-type: none"> - Reduces speeds marginally - Reduces conflicts as pedestrians can take refuge on medians - May restrict access to driveways - May reduce room for cyclists

Access/Volume Control

Access and volume control measures are intended to deter vehicles to make certain movements to prevent vehicles entering a roadway while allowing pedestrians and cyclists. These measures are typically used for locations with high volumes of short cutting traffic. Short cutting traffic is defined as vehicles using a road that was not intended to carry these vehicles based on its classification. Since these traffic measures may disrupt the connectivity of the overall transportation network, it is recommended when other traffic measures are deemed not effective, and with definitive neighbourhood support. Access and volume control measures are shown in Table 4.




Table 4: Access/volume control traffic calming measures

Traffic Calming Measure	Example	Considerations Description
<p>Diverter</p> <p>A raised barrier that lies diagonally across an intersection that forces traffic to turn and prevents it from proceeding through.</p>		<ul style="list-style-type: none"> - Reduces volume significantly - Does not do much regarding speed - Not ideal for emergency vehicles
<p>Raised Median Through Intersection</p> <p>Asphalt island located on the centerline of a two-way roadway through an intersection that prevents left turns and through traffic.</p>		<ul style="list-style-type: none"> - Reduces volume by eliminating cut-through traffic - Restricts resident access - May restrict emergency vehicle access
<p>Directional Closure</p> <p>Curb extension or vertical barrier extending to about the centerline of a roadway prohibiting one direction of traffic.</p>		<ul style="list-style-type: none"> - Reduces speed, volumes, and conflicts through shortening the pedestrian crossing - Restricts resident access - May complicate street sweeping and snow removal
<p>Right-In/ Right-Out</p> <p>Raised triangular island at an intersection which prevents left turns and through movements to and from the intersecting street or driveway</p>		<ul style="list-style-type: none"> - Reduces conflict points and volumes - Restricts resident access - May complicate street sweeping and snow removal

3.2.3 Passive Measures

Locations that satisfied the initial criteria, however, did not meet the warrant, passive traffic calming measures are considered. These measures are relatively low in cost, and may be temporary, but the concerns may be resolved through modified driver behaviour from education and awareness. Many of the passive measures are the community-led initiatives; these initiatives are proposed and developed by local residents which typically result in higher engagement level. These initiatives do not require any changes to the road geometry or interfere with any operational work by the Township. The Township will work with the residents to review, approve, and monitor any passive measures to ensure safety for all users, and that potential impacts on Township and traffic operations are identified and mitigated. Passive traffic calming measures that can be considered in Wilmot are shown in Table 5.

Table 5: Passive traffic calming measures

Traffic Calming Measure	Example	Considerations Description
<p>Location-specific Enforcement</p> <p>Police enforcement in a specific area known for traffic and driving infringements</p>		<ul style="list-style-type: none"> - Meant to warn drivers, increase education - Enforcement for speed reduction and awareness
<p>Resident Lawn Signs</p> <p>Signs such as 'Please Slow Down' and 'Thank You for Slowing Down' signs to remind drivers to slow down</p>		<ul style="list-style-type: none"> - Meant to communicate with the drivers that children and other vulnerable road users are in the area - Based on resident voluntary commitment
<p>Education Campaign</p> <p>To raise awareness of road safety issues to all road users. Presented information can include traffic calming procedure, proper use of the measures, traffic calmed locations, and preventative safety measures.</p>		<ul style="list-style-type: none"> - Through workshops, pamphlets, and social media to raise awareness - Combine campaigns with information of law enforcements for greater impact - Can focus on different audience groups with various messages

Traffic-Calmed Neighbourhood		<ul style="list-style-type: none"> - Meant to make motorists aware that they are entering a traffic-calmed zone - Usually combined with other measures
Sign to notify motorists of traffic calming measures such as speed humps		

4.0 Traffic Calming Measures Guidelines

4.1 Consideration for Traffic Calming

Traffic calming measures will:

- Be considered when there is a demonstrated safety, speed or short-cutting traffic concern and acceptable alternative measures have been exhausted.
- Be considered after focus is placed first on improvements to the arterial road network, such as signal timing optimization.
- Include consideration as to whether an area-wide plan versus a street-specific plan is more suitable: an area wide plan should be considered if a street-specific plan would likely result in displacement of traffic onto adjacent streets.
- Be predominantly restricted to two lane roads (one lane of through traffic in each direction).
- Not impede non-motorized, alternative modes of transportation and be designed to ensure pedestrian and cycling traffic is unaffected.
- Not impede Emergency Services access unless alternate measures are agreed upon with the affected Departments.
- Maintain reasonable automobile access to Township roads.
- Consider parking removal on a project-by-project basis. Parking needs of residents should be balanced with the equally important functions of traffic, emergency vehicle access, transit, bicycle, and pedestrian movement.
- Only be installed after staff has investigated existing traffic conditions and the necessary approvals have been received.
- Be monitored; follow-up assessment and report will be completed to confirm effectiveness, and the results will be communicated to area residents and Council.

4.2 Community Involvement

Restoring neighbourhood streets to their intended function and improving overall livability are primary objectives of traffic calming. In order to achieve this goal, community involvement and support is paramount. Throughout the process, residents are encouraged to participate in the development of a traffic calming plan suitable to the neighbourhood and the concerns within it.

Communication with residents is made at various stages throughout the process as the traffic calming plan is developed and implemented. Traffic calming plans should be developed with an understanding of current and historical traffic patterns within the area under investigation. For a traffic calming program to be successful, the neighbourhood must support and be committed to the solution. The only means of gaining this commitment is to involve the residents by informing them of the study location being considered for traffic calming measures and the proposed solution.

The benefit of neighbourhood involvement is that it generates support for a traffic calming program and assists in the implementation of a plan without significant opposition upon completion. Neighbourhood involvement also enhances the credibility of the traffic calming program, particularly when it is eventually presented to Council for approval. In order to obtain a working partnership with the residents, a description of the study will be issued in a notice along with a survey delivered to residents affected by the implementation of the proposed traffic calming measures.

These forms of contact will provide the affected residents with opportunities to offer input into the development of the plan, as well as publicize and increase the awareness of the study.

The review and implementation of traffic calming measures is a time consuming and expensive process requiring many resources. Without public support, the traffic calming measures intended to alleviate traffic concerns could be met with negative public opinion as a result, jeopardizing the outcome and potential positive impacts to affected neighbourhoods.

Neighbourhood support, enforcement, education of motorists, bicyclists and pedestrians, appropriate engineering applications and economics typically determine the success of any traffic calming endeavor. A cooperative partnership between the affected residents and the Township is essential to the success of the project.

In some cases, it may be found that traffic calming measures could improve the safety of the road network, and a majority of affected residents would prefer some form of mitigation, but there is a wide range of conflicting opinions regarding the type of mitigation. Pending comments received from the residents regarding the notification and survey, the Township may offer to host a Public Open House to discuss potential options for traffic calming measures.

4.3 Class Environmental Assessment Process

Traffic calming is exempt from the Ontario Environmental Assessment Act and is not an undertaking subject to the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended). Where appropriate, public consultation elements of the Municipal Class EA for a Schedule B project (including the potential public meeting when warranted as noted above) have been incorporated in this policy as a best practice.

It should be noted that the retirement of existing laneways, roads and road related facilities is classified as a Schedule A+ project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended). Schedule A+ projects are pre- approved, provided that the public is advised prior to implementation. The manner in which the public is informed throughout this policy will serve as the preferred method of public notification for any traffic calming measures that involve the retirement of existing road facilities.

5 Traffic Calming Staff Review Considerations

The following process will be used when proceeding with a request for traffic calming measures within the Township of Wilmot. An established and formal process for investigating traffic calming requests provides consistency and equality in the determination of need and suitability of traffic calming measures.

Step 1: Initiate Traffic Calming Request Resident Concern

Residents with traffic related concerns are instructed to complete the form in Appendix A of this Policy and submit their written request to investigate traffic calming on their road or within their neighborhood to the Transportation Services Department. Staff will then conduct a brief preliminary assessment to determine if the requested road meets the initial screening criteria.

Initial Screening by Township staff

Initial screening criteria to determine eligibility for consideration for traffic calming measures have been established.

With respect to the road or road section in question, it must:

- Be a local or collector road assumed and maintained by the Township of Wilmot;
- Have a minimum length of 150m
- Have a maximum posted speed of 60km/hr.
- Have a minimum Annual Average Daily Traffic (AADT) of 500

In addition, the following must also be satisfied:

- All reasonable efforts have been made to address the concerns utilizing other means including engineering, education and enforcement tools; and
- Zoning should be primarily residential in nature.

For roads or road sections with restricted horizontal and/or vertical alignment, and hence restricted sight lines, traffic calming measures could be considered in conjunction with reduced speed limits and adequate warning signs.

Response to Residents

Following the initial review, Township staff will inform residents as to whether or not their location meets the initial screening criteria. Residents with requests that meet the above noted initial screening criteria will receive information about the traffic calming process. Roads that do not meet the above-noted criteria may still be eligible for other mitigating measures and/or police enforcement initiatives.

For locations not meeting the above-noted initial screening criteria, staff will consider front-line mitigating measures to address the neighbourhood traffic concerns. These methods could include tools such as the use of targeted police enforcement through Waterloo Regional Police Services Safety Traffic Enforcement Program, sign installation, and pavement marking modifications.

Step 2: Data Collection

If the requested location meets the initial screening criteria, data collection and analysis will commence. The collection of traffic data, as deemed necessary by Township staff, will serve to provide a better understanding of the current traffic conditions and to prioritize locations for the investigation of traffic calming.

Staff will conduct the necessary traffic studies (or outsource such studies) to quantify and qualify the submitted traffic concerns. The data collected may include traffic volumes and composition (cars and trucks), vehicle speeds, collisions, sight lines related to deficient horizontal and/or vertical alignment and stopping distance, pedestrian activity, an origin/destination study (third party study), if the request relates to shortcutting traffic, and historical site-specific information.

Staff may recommend that adjacent residential roadways that will likely be impacted by modifications on the subject roadway(s) within the neighbourhood be included in the traffic calming review.

For vehicle speeds, it is not prudent to consider the highest speed at which motorists travel. Rather, the 85th percentile speed will be considered, which is the speed at which 85% of the total traffic volume on a road is travelling at or below. In considering the need for traffic calming, the 85th percentile speed must exceed the posted speed limit by a minimum of 10 km/h as per the values provided in Table 1.

Table 1: 85th Percentile Speed Considerations

Posted Speed Limit	85 th Percentile Speed
40 km/h	50 km/h
50 km/h	60 km/h
60 km/h	70 km/h

With respect to sight distances and the need for traffic calming to reduce travel speeds upon approach to intersections, the existing sight distances at intersections must be less than the distances outlined in Table 2 for traffic calming to be warranted. For lower speed roads (e.g. posted speed of 50 km/h or less), the design speed is typically taken as 10 km/h over the posted speed, whereas for higher speed roads (e.g. posted speed of 60 km/h or more), design speed is typically 20 km/h greater than posted speed.

Table 2: Stopping Sight Distance Considerations

Design Speed	Minimum Stopping Sight Distance
40 km/h	45 m
50 km/h	65 m
60 km/h	85 m
70 km/h	110 m

The above distances in meters (m) at each design speed are the “minimum stopping sight distances on wet pavement” as outlined in the MTO Geometric Design Standards.

Once collected and summarized, the data will be utilized in the overall assessment to determine the need for traffic calming and assist in setting priority for locations of consideration.

Step 3: Data Assessment

Basis for Assessment

The data assessment is a screening process focused on the various attributes of a road in order to quantify its potential need for traffic calming. By means of assigning weighted points based on the severity of certain road attributes (e.g. 85th percentile speed), this process will bring to the forefront roads requiring consideration while quantifying the current conditions. A basis for assessment has been prepared in consideration of comparable traffic calming policies in effect

throughout the area (refer to Appendix B for the assessment worksheet). Only road sections that achieve the minimum required points as specified in Appendix B will be reviewed further in the next steps of the process.

Should the minimum required points be met for a request, depending on funding availability, locations for implementation will be selected based on the point system, with those locations with the highest points implemented first. If funding does not permit all locations to be implemented in one year, roads will be carried forward to the next year when they will then be re-prioritized to include any new locations.

Assessment Thresholds

The minimum number of points required to proceed with the investigation of traffic calming measures differs based on the classification of road. In keeping with the objective of restoring roads to their intended function, local and collector roads are designed and expected to convey varying levels of traffic volume. This, in turn, has a bearing on the minimum point value required to proceed, as traffic volume is a major consideration. Based on this, the following are minimum point values for each road type, as can be seen in Appendix B:

- Local road minimum 35 points
- Collector road minimum 45 points

Response to Residents

Based on the points received for a request location and the existing conditions / parameters of the area, an appropriate type of traffic calming measure will be selected by staff and communicated to the affected residents by way of a written notice and request for proponents to complete a survey / petition.

Should a location fail to meet the requirements, the resident(s) will be notified in writing and the investigation for traffic calming measures will discontinue. However, staff may (depending on the circumstances of the data assessment, such as excessive speeds being noted) continue to address the concerns of the residents by means of the front-line mitigating measures including:

- Request of targeted police enforcement.
- Community entrance signs such as "Drive slowly...think of us".
- Installation of temporary radar speed display signs.

The signs used as front-line mitigation measures are visual reminders to motorists that they are entering a residential area where the residents are concerned about safety. Targeted police enforcement will make drivers more aware of the speed limit and force them to temporarily reduce their speed and comply with speed limits.

Residents may wish to follow up with the Director of Infrastructure and Development who can, if in agreement with the residents' request, propose a motion to Council requesting a report from staff to Council explaining the denial. Through this motion Council may overrule the decision and support a traffic calming measure.

Step 4: Neighbourhood Petition/Survey

Should it be determined that the road / study area meets the minimum points criteria, staff will advise residents in the neighbourhood that would be affected by the new traffic calming measure advising of the potential new roadway works. Following a review with the neighbourhood by way of notification or Public Open House, the neighbourhood proponents will be requested to submit a written confirmation of their opinion by way of completing a survey / petition that Township staff will provide to each proponent along with the notice. The focus of the petition will center on whether there is sufficient neighbourhood / local support to implement the proposed / selected traffic calming measure on the requested road. This is to ensure that the majority of residents in the area would actually prefer to have the traffic calming in place, rather than creating more of a neighbourhood nuisance than an effective mitigation measure.

The petition would have to contain an indication of support from at least 60% of the households with direct frontage or side abutment onto the section of road that has been identified as the location for the potential implementation of traffic calming measures, as defined by Township staff. Each household is represented by one signature, regardless of the number of people in the household. Failure to meet the 60% support level will result in termination of the investigation; meeting the required 60% support level will confirm that the proposed traffic calming measure is to proceed. This step in the process is crucial in confirming the level of concern from the residents and will prevent implementation of measures that are not supported by the remainder of the neighborhood.

Neighbourhood Support Survey

The objective of the neighbourhood support survey is to determine the level of support for the traffic calming design and to provide an opportunity for the most directly affected residents to oppose any modifications to the road. It is also intended to measure the support of the preferred design proposed to the residents. Surveys will be delivered by mail and at a minimum, will contain:

- A brief description of traffic calming, including its advantages and disadvantages.
- The results of the traffic studies undertaken by staff.
- A survey question asking if residents are in favour, opposed or neutral to the implementation of traffic calming measures in the identified location(s).
- The preferred traffic calming design.
- A request for comments and feedback; and
- An indication that this is the final opportunity to modify and improve the preferred design to address any outstanding concerns and to incorporate resident input.

In order for the process to continue, a minimum of 25% of total surveys delivered must be returned to the Township. Of this 25%, 60% acceptance for the implementation of traffic calming is required. This reinforces that community support is vital for the ultimate success of traffic calming. For example, if 100 surveys are delivered, a minimum of 25 surveys is required to be returned and of those, 15 must indicate acceptance of the recommended traffic calming measure.

If this support rate is not met, the process will cease and a notification of failure to meet the neighbourhood support levels will be sent to the residents on the mailing list.

Should the support rate be met but there is a wide range of comments / opinions regarding the type of traffic calming measures being proposed, Township staff may coordinate a public meeting to further engage the affected residents, educate on traffic calming in general and take any final comments into consideration.

Step 5: Design Consideration & Community Feedback Selection of Traffic Calming Measures

The data collected combined with site visits, historical information, future maintenance and construction plans, as well as resident feedback will be taken into consideration to determine potential traffic calming measures. Appropriate traffic calming measures will be determined based on the list of traffic calming measures outlined in Section 3 of this policy. The traffic calming design could include one or more different types of traffic calming techniques. The proposed traffic calming measures will be in accordance with the design guidelines outlined in the Canadian Guide to Neighbourhood Traffic Calming and the judgment and experience of Township staff and the selected measure will be explained to the affected residents in the notice/request to complete the survey/petition.

Agency Consultation

Staff will provide the preferred design to the relevant agencies (e.g. fire emergency services, transit services, etc.) prior to circulating the notice to the residents. Comments from the potentially affected services will be solicited and feedback with respect to possible impacts will be encouraged. As required, Township staff will work with agencies to modify the design, as necessary. While it is preferable to modify the traffic calming design, if modifications are not able to remedy agency concerns, the traffic calming process will be discontinued for the road under consideration and residents will be notified accordingly.

Neighbourhood Consultation

Using summarized comments from the submitted petition and information about the road and surrounding area, staff will define the area limits for neighbourhood consultation. As part of this process, surrounding roads may be identified as part of the investigation. As a minimum, households with direct frontage onto the road as well as each property whose side yard abuts the subject road section will be issued a notice of the impending traffic control measure. Households that do not directly front the subject road, but who have no other option but to use the section of road where traffic calming is being proposed will also receive a notice.

Step 6: Finalize & Implement the Traffic Calming Plan

Using technical data, community feedback, and in keeping with the goals, objectives and principles set out in this Policy, staff will finalize the preferred traffic calming design to be put forward as the preferred Traffic Calming Measure. In finalizing the preferred Traffic Calming Measure, general consideration will be given to the various aspects of road design such as utility placement, landscaping, sign requirements and drainage.

Staff may determine that implements for traffic calming be phased in using temporary or removeable measures (example: pavement markings, temporary speed humps) to allow time to review the impact and effectiveness of such measures prior to committing funding to permanent installations.

Council Notification

A report recommending the implementation of the preferred traffic calming measure will be submitted to Council. The recommendation may be accompanied by an amending By-law for the inclusion of traffic calming measures, if applicable (e.g. defining a new Community Safety Zone as required under the Highway Traffic Act, etc.). The staff report will also outline estimated costs and anticipated timing for implementing the traffic control measure. The neighbourhood and affected parties will be made aware of when and where Council will be considering the staff report.

Implementation

Upon approval of Council, resident notification, and sufficient funding, traffic calming measures would be implemented. When immediate funding is not available, budget allocation will be considered during the following annual budget process and prioritized accordingly.

Step 7: Feedback Monitoring & Evaluation Monitoring & Evaluation

Township staff will seek feedback and monitor the road to determine the effectiveness of the utilized measures and their impact on the surrounding road network. This may include subsequent traffic data collection including new traffic volume and speed no sooner than 3 months after the traffic control measure has been installed.

Removal of Traffic Calming Measures

Traffic calming devices may be removed, at the request of residents provided that more than the level of support exists to remove as was measured for installation (i.e. minimum 25% returned surveys, with over 60% of respondents agreeing to the removal). The survey will be delivered to the same residents as was initially done to gauge support for traffic calming. Traffic calming measures must be installed for at least a 3-month trial before consideration is given to remove them. If traffic calming devices are removed, the subject street must wait at least 2 years before requesting a new Traffic Calming Measure; at this point the approval process will start over.

If a request to remove a single traffic calming device, within an overall Traffic Calming Measure, is received, all traffic calming devices will be considered for removal. Depending on circumstances, it could be possible to remove a single device constructed as part of an overall plan, however, in most cases all devices work together to be effective and to ensure that traffic is not diverted where it should not be.

The Township reserves the right to remove traffic calming measures if it determines that they are ineffective or unsafe, or if they have created a negative impact that cannot be corrected. The Township will mail out a notification and advertise in local newspapers informing of its decision to remove traffic calming measures.

Appendix A Request Form

Appendix B Traffic Calming Assessment Tool

Appendix C Process Flow Chart

References:

This Policy has been created based on the existing policies from similar sized townships such as Woolwich, Innisfil and LaSalle.