



Transportation and Mobility Master Plan

Appendix C | Traffic Calming Strategy

Table of Contents

1.0 INTRODUCTION	1
2.0 PRINCIPLES OF TRAFFIC CALMING	1
3. TRAFFIC CALMING PROCESS	2
3.1 Step One: Screening	3
3.2 Step Two: Assessment	3
4. TYPES OF TRAFFIC CALMING	5
4.1 Facility Selection	5
4.2 Public Engagement	10
4.3 Monitoring and Feedback	10

List of Tables

Table 1: Screening Criteria for Traffic Calming Requests	3
Table 2: Traffic Calming Point Assessment	4
Table 3: Traffic Calming Measures & their Applicability to Urban & Rural Contexts	6

1.0 INTRODUCTION

Traffic calming plays a key role in enhancing road safety by reducing vehicle speeds and promoting safe driving behaviour. Traffic calming involves a series of strategies that modify road design and/or signal to drivers to slow down. Traffic calming is often implemented reactively on roads where driver behaviour does not match the roadway's intended function, surrounding land use, or the needs of other road users, such as pedestrians and cyclists. However, traffic calming measures should also be incorporated into the design or redesign of streets and new residential developments. By creating road conditions that promote lower traffic operating speeds, traffic calming makes streets safer for everyone.

Traffic calming measures may include:

- Pavement markings and/or signage
- Changes to the roadway surface texture and/or colour
- Changes to the vertical and/or horizontal alignment of the roadway
- Changes to the travelled portion of the roadway through pavement and/or lane narrowing

This document outlines a systematic process for determining when traffic calming measures are warranted and provides guidance in selecting appropriate measures. The process ensures that traffic calming is applied where it is most effective in enhancing safety for all road users, while minimizing cost and impacts on emergency services.

2.0 PRINCIPLES OF TRAFFIC CALMING

The following traffic calming principles are commonly applied by Ontario municipalities when selecting and implementing traffic calming measures. These principles ensure that chosen measures are appropriate for the surrounding context, align with the community's needs, and minimize potential negative impacts. Applying these principles will strengthen the effectiveness of traffic calming plans and foster greater community acceptance and support for final traffic calming plans.

- **Ensure the problem is real rather than only perceived** – Road safety can be an emotional subject. A data-driven approach should be taken to maximize the effectiveness of traffic calming measures and make the most of limited resources.
- **Quantify the problem** – Quantifying the extent of the problem can help identify appropriate measures. This typically requires the collection of data, including speeds, traffic counts, collision data and pedestrian usage.

- **Maintain and minimize impacts on delivery of emergency services** – Consideration of emergency services should be given to support effective traffic calming while minimizing impact on emergency vehicles such as fire trucks, ambulances, and police vehicles.
- **Maintain and minimize impacts on delivery of public services** – Potential impacts on snow plowing, waste collection, drainage, street sweeping, and school bus services should be also considered when identifying appropriate traffic calming measures.
- **Use cost effective measures** – The cost of traffic calming measures can vary greatly. To ensure a cost-effective approach, a phased approach should be taken. Start simple and avoid over-design, as traffic calming measures can generally be upgraded later.
- **Minimize impacts on adjacent residential streets** – Traffic calming on one street may impact turning movements or entice drivers to use adjacent streets. These potential impacts should be considered to ensure traffic calming does not create or exacerbate existing problems.
- **Target automobiles and not non-motorized modes** – Traffic calming measures are designed to slow motor vehicles while allowing people walking and riding bicycles to travel unaffected.

3. TRAFFIC CALMING PROCESS

A two-step process to identify and prioritize potential locations for traffic calming is recommended for Wellesley Township. First, potential locations are screened to determine whether they would be suitable for traffic calming. Eligible locations are then evaluated using a point-based system that establishes a minimum threshold and helps rank sites based on need and priority.

Note that the proposed process is designed for roads within the Township's urbanized settlement areas, rather than for rural roads. Rural roads may benefit from passive traffic calming measures, such as signage and pavement markings, which are described in Section 4.1 of this Appendix, as well as other measures such as targeted enforcement. Physical traffic calming measures (such as speed humps and curb extensions) are typically not applicable, due to high vehicle speeds and the need to accommodate farm equipment and horse-drawn vehicles.

Note that this process is intended for existing Township streets; in newly built streets, including in new developments, streets should be designed and incorporate traffic calming features as appropriate to align the design speed of the road with the desired posted speed. As per the overall road safety recommendations of the TMMP, this is recommended to be 40 km/h in urbanized areas of the Township.

3.1 Step One: Screening

Potential locations for traffic calming can be identified by council, Township staff, or the public. When a request for traffic calming is received, Township staff should first screen the location based on the following criteria:

Table 1: Screening Criteria for Traffic Calming Requests

Traffic Calming History	No requests within the past 2 years; no traffic calming installations within the past 5 years
Road Classification	4 or 5
Block Length	Greater than 110m between stop-controlled intersections
Speed Limit	Not Greater than 50 km/hr
Daily Traffic Volume	Greater than 750 vehicles per day
Grade	Maximum 8%

3.2 Step Two: Assessment

If the proposed road is eligible for traffic calming measures, a Traffic Calming Point Assessment scoresheet can be used to further screen and prioritize candidate locations. This approach involves collecting necessary data for a potential location and assigning a score based on the criteria below. Candidate locations that meet a minimum threshold will be prioritized based on highest score. This process allows the Township to develop an annual schedule for implementing traffic calming measures based on priority and budget. The Traffic Calming Point Assessment shown in **Table 2** is recommended for the Township, with a score of 40 representing the minimum threshold for a road to be considered for traffic calming.

Table 2: Traffic Calming Point Assessment

Feature	Range	Criteria
Speed	0 to 35	5 points for every 2 km/hr that the 85 th percentile speed is greater than 7 km over the speed limit
Excessive Speeds	0 to 5	5 points if 5% or more of daily traffic exceeds the speed limit by at least 15 km/hr
Volume	0 to 20	5 points for traffic volume between 1250 and 1999 vehicles per day 10 points for traffic volume between 2000 and 2699 vehicles per day 15 points for traffic volume between 2700 and 3499 vehicles per day 20 points for traffic volume above 3500 vehicles per day
Collisions	0 to 10	2 points for every collision resulting in an injury over the past 3 years 3 points for each collision involving a pedestrian or cyclist over the past 3 years 10 points if there has been a fatal collision
Pedestrian Facilities	0 to 10	10 points for no sidewalks 5 points for sidewalks on one side
Pedestrian Generators	0 to 15	5 points for each pedestrian generator adjacent to the roadway (within 200 m of segment being studied). These include: schools, playgrounds, community centres, trails, or commercial areas.

4. TYPES OF TRAFFIC CALMING

Types of traffic calming measures include:

- **Horizontal Deflections** - These measures create a lateral or side-to-side shift in the vehicle path, forcing drivers to reduce their speed to comfortably navigate the measure. Examples of horizontal deflections include chicanes and lateral shifts. At intersections, roundabouts can also be considered a form of horizontal deflection for traffic-calming purposes.
- **Vertical Deflection** - Vertical Deflections create an upward movement of a vehicle as it passes over the feature. Examples include speed humps and raised crosswalks.
- **Roadway Narrowing** - Roadway narrowing alters the cross-section of a road by reducing the number of travel lanes or decreasing their width. This encourages lower speeds, as drivers naturally slow down to avoid potential or perceived hazards. Examples of roadway narrowing include curb extensions and raised median islands. In commercial and residential areas, on-street parking can also function as a form of roadway narrowing.
- **Pavement Markings** - On rural roads and other areas where more obtrusive traffic measures would be unsuitable, pavement markings can provide an effective alternative. Pavement markings create a visual illusion that narrows travel lanes without making physical changes to the roadway. Pavement markings can include converging chevrons and on-road sign pavement markings.
- **Signage** - Road signs reminding drivers to check their speeds and alerting drivers to school areas, cycling routes, and pedestrian crossings can encourage safer driver behaviour. Dynamic speed signs, which detect and display a vehicle's speed, can be particularly effective at improving awareness and encouraging drivers to slow down.




4.1 Facility Selection




The selection of traffic calming measures depends on the surrounding context and the Township's goals for a particular location. Other considerations include:




- Effectiveness in addressing the problem
- Effects on traffic volumes and efficiency
- Effects on other corridor users, including people walking and riding bicycles
- Constructability, maintenance and life-cycle costs
- Different types of traffic calming measures and their appropriate use is described in the following sections.

Table 3: Traffic Calming Measures & their Applicability to Urban & Rural Contexts

Traffic Calming Measure		Urban	Rural
Horizontal Deflection			
<p>Chicane</p> 	<p>A chicane is a series of alternating curves on a road designed to slow traffic by forcing drivers into an s-shaped path. Chicanes can be created through a series of alternating curb extensions, parking restrictions, or planters.</p>	✓	
<p>Lateral Shift</p> 	<p>Lateral shifts create a deliberate sideways jog or realignment that forces drivers to negotiate a curve, slowing vehicle speeds and increasing awareness of the road.</p>	✓	
Vertical Deflection			
<p>Speed Hump</p> 	<p>A speed hump is raised area on a road intended to slow vehicle traffic by producing sufficient discomfort when travelling above certain speeds. Longer and gentler than a speed bump, speed humps are designed to reduce speeds to about 25-30 km/hr where they are installed.</p>	✓	
<p>Speed Cushion</p> 	<p>A raised area on a road, similar to a speed hump, but does not cover the entire width of the road. The width is designed to allow large vehicles, such as buses or emergency vehicles, to “straddle” the cushion, while light vehicles will have at least one side of the vehicle go over the cushion.</p>	✓	
<p>Raised Crosswalk</p> 	<p>A raised crosswalk is a marked pedestrian crosswalk at an intersection or mid-block location constructed at a higher elevation than the adjacent roadway.</p>	✓	

<p>Curb Extensions</p> 	<p>A curb extension (also known as neckdown, choker, or bulb-out) involves extending the curb on one or both sides of the street resulting in a narrower section of roadway. Curb extensions work to slow vehicles while reducing crossing distances for pedestrians. They also prevent parking too close to an intersection. Curb extensions can be installed at intersections or midblock locations.</p>	<p>✓</p>	
<p>Lane Narrowing</p> 	<p>Lane narrowing involves reducing the width of traffic lanes through pavement markings or physical features. Lane narrowing slows vehicle speeds and can also be used to reallocate space for bike lanes or wider sidewalks.</p>	<p>✓</p>	
<p>Raised Median Island</p> 	<p>A centre island median is an elevated median constructed in the center of a two-way roadway to reduce the overall width of the adjacent travel lanes. A centre island median can reduce vehicle speeds as well as pedestrian-vehicle conflicts.</p>	<p>✓</p>	
<p>Vertical Centreline Treatment</p> 	<p>Vertical centreline treatments use physical barriers, such as flexible posts or bollards, to create the perception of a narrower roadway. This treatment is designed to encourage slower, safer driving by making drivers feel more constrained.</p>	<p>✓</p>	
<p>On-Street Parking*</p> 	<p>On-street parking can narrow the effective roadway space available for vehicle movement, encouraging motorists to slow down and be more cautious to avoid parked vehicles. *Note that this is only effective if there is sufficient parking demand, and measures should ensure additional parking does not obstruct sightlines or create other safety issues.</p>	<p>✓</p>	

Pavement Markings			
<p>Converging Chevrons</p> 	<p>Converging chevrons consist of V-shaped pavement markings pointed in the direction of travel. The chevrons can be placed closer together to create the illusion that a vehicle's speed is increasing. These markings are intended to increase a driver's awareness of the need to reduce their speed.</p>	<p>✓</p>	<p>✓</p>
<p>Dragon's Teeth</p> 	<p>Dragon's teeth are of a row of triangular road markings used as a gateway feature to alert drivers that they are approaching a crossing or entering a lower speed zone. Dragon's teeth can be installed either parallel or perpendicular to travel lanes. They are often used in conjunction with ladder crosswalk markings to increase pedestrian visibility.</p>	<p>✓</p>	<p>✓</p>
<p>Full Lane / Peripheral Transverse Bars</p> 	<p>Full lane or peripheral transverse bars are a series of parallel lines that run perpendicular to travel lanes that either run across the entire lane (full lane) or as short lines at the periphery. Like Converging Chevrons, the lines may be placed closer together to create the illusion that a vehicle's speed is increasing.</p>	<p>✓</p>	<p>✓</p>
<p>On-Road Pavement Markings</p> 	<p>On-road pavement markings consist of symbols or messages painted onto the road alerting drivers to slow down or watch their speed.</p>	<p>✓</p>	<p>✓</p>

Signage			
<p>Regulatory Signage</p> 	<p>Regulatory road signs inform drivers of traffic laws, requirements, and restrictions that they must follow. Examples include speed limit and pedestrian crossing signs.</p>	<p>✓</p>	<p>✓</p>
<p>Road Safety Messages</p> 	<p>Road safety messages provide visual clues that warn, guide, or remind drivers to slow down and be aware of potential conflicts. Road safety messages include deer crossing signs and signs alerting drivers to children at play.</p>	<p>✓</p>	<p>✓</p>
<p>Dynamic Speed Signs</p> 	<p>A dynamic speed sign is an interactive sign that displays vehicle speeds as oncoming motorists approach. Vehicle speed is captured using radar, triggering the display board to show when vehicles approach. These signs can be used upstream of manned speed enforcement.</p>	<p>✓</p>	<p>✓</p>

4.2 Public Engagement

Public input is an important component in the selection of traffic calming locations. As the Township receives inquiries about the need for traffic calming, the above traffic calming process will allow Township staff will be able to share the ranking of the candidate site and identify if and when the site in question is scheduled for traffic calming.

Public engagement should begin once a potential location is identified and recommended for traffic calming. The following steps should be taken to inform the public and request input:

- Township Staff should notify the local Councillor to receive feedback from constituents
- A webpage should be set up on the Township's Engage website
- Residents and property owners on the impacted street should be notified via mail

4.3 Monitoring and Feedback

To gauge the effectiveness of implemented measures, Township Staff should conduct a speed study six months after a traffic calming project has been completed. If the results show that the 85th percentile speed is less than 10 km/h over the posted limit, staff will conduct a second speed study six months later. If speeds remain below this limit, no further action is needed. Results will be shared with Council and the public.

If 85th percentile speeds are above 10 km/hr above the posted limit, staff will review the design and consider improvements.