

CITY OF ORILLIA POLICY MANUAL

Part	2	Environmental Services and Operations, Development Services and Engineering	2.6.1.1.
Section	6	Traffic Calming	
Sub-Section	1	Manual	
Policy	1	Guidelines and Procedures for Traffic Calming	

1 INTRODUCTION

1.1 Background

The Development Services and Engineering Department (“DSE”) receives numerous concerns, both real and perceived, from residents regarding high traffic volumes, short-cutting, speeding and overall neighbourhood safety.

1.2 Purpose

The purpose of this policy is to provide guidelines, procedures and criteria for the initiation, investigation and implementation of traffic calming measures within residential neighbourhoods. This policy addresses safety concerns related to speeding and excessive volume (evidence of short-cutting) in a fair and efficient manner. Guidelines included in this policy will be applied to Local and Collector Roads within primarily residential neighbourhoods. The policy does not apply to arterial roadways.

1.3 Objective of Traffic Calming

The objective and purpose of traffic calming is to restore streets to their intended function by addressing undesirable traffic conditions such as speeding and excessive volume on Local and Collector Roads. The objectives of traffic calming, and this policy are to:

1.3.1 Increase the Safety of Neighbourhoods

Excessive traffic volume and speeding on residential roads is the basis for many of the concerns received from residents. The appropriate use of physical measures alone or in various combinations and implemented properly, can alter driver behaviour and can improve safety on neighbourhood streets by reducing conflicts between street users. The resulting reduction in volume and speed will create a safer environment for all residents including pedestrians, cyclists, children, disabled persons and seniors.

1.3.2 Improve the Livability of Neighbourhoods

Traffic calming measures may restore the livability of a neighbourhood by minimizing the volume and speed of through traffic. As a result, negative impacts such as excessive noise, air pollution from vehicle emissions, volume of vehicles, and potential safety hazards are minimized. Traffic calming measures can aesthetically enhance the neighbourhood environment with design and landscaping.

1.3.3 Restore Streets to their Intended Function

The purpose of traffic calming is to restore streets to their intended function. The principal function of a Local Roads are intended to provide access to adjacent properties and are not intended to be through routes or move significant amounts of traffic. While a Collector

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Road is intended to provide connections between Local Roads and other Collector and Arterial roads.

1.3.4 Preserve Access and Minimize Impact to Emergency Services, Public Transit and Other Maintenance Services

The potential impacts to emergency services, transit and maintenance vehicles will 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 policy outlines the process through which all potentially impacted services will have the opportunity to comment on any proposed plans before implementation.

1.3.5 Promote Public Participation and Community Support

Traffic calming measures have a direct impact on neighbourhoods and the residents living in them. For traffic calming to be successful, the neighbourhoods must be committed to and support the solution. An important part of the process includes resident communication and feedback for staff to understand the history of the traffic problems in the neighbourhood. 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.

1.3.6 Traffic Calming Advantages and Disadvantages

Advantages

Traffic calming may:

- Reduce motor vehicle speeds;
- Reduce traffic volume;
- Discourage through traffic;
- Reduce collisions;
- Improve neighbourhood environment (i.e., reduce traffic speed related noise, improve pedestrian safety etc.); and
- Reduce conflicts between roadway users.

Disadvantages

Traffic calming may:

- Increase emergency vehicle response time;
- Reduce ease of access in and out of neighbourhoods;
- Result in expensive solutions (time and resources);
- Shift or divert traffic onto neighbouring roadways;
- Increase maintenance time and costs (e.g., snow clearing, garbage pick-up); and
- Result in the implementation of measures some consider visually unattractive and/or cause increased noise pollution.

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2 TRAFFIC CALMING GUIDELINES

2.1 Guidelines

The following guidelines will be taken into consideration when investigating, selecting and implementing traffic calming measures. This will ensure that the appropriate measures are considered fully, and the potential negative impacts are minimized. Following these guidelines will maximize the effectiveness of traffic calming while building community acceptance and support for the final recommendations.

Traffic calming measures will:

- Be considered only after education, enforcement and traffic engineering efforts have failed to produce the desired results.
- 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 adjusting signal timing.
- 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.
- Not impede non-motorized, alternative modes of transportation and be designed to ensure pedestrian and cycling traffic is unaffected.
- Not impede emergency, transit and maintenance services access unless alternate measures are agreed upon.
- Maintain reasonable automobile access to City roadways.
- 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, maintenance, bicycle, and pedestrian movement.
- Only be installed after staff in the City's Development Services and Engineering Department (DSE) have investigated existing traffic conditions and the necessary approvals have been received.
- Be monitored; follow-up studies will be completed to assess effectiveness and the results will be communicated to the community and Council.

2.2 Community Involvement

For traffic calming to be successful, the neighbourhood must be committed to and support the solution. The most effective means of gaining this commitment is to involve the residents by informing them of the study location being considered for traffic calming

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measures. Another important part of the process includes resident communication and feedback as to the history of the traffic problems and possible solutions. Residents are encouraged to participate in the development of a traffic calming plan suitable to the neighbourhood and the concerns identified within it.

2.3 O.P.P. Updates

When a study is being conducted and speed data is collected, it is beneficial to make the Ontario Provincial Police (O.P.P.) aware of areas where there are a significant number of drivers who are disobeying the speed limit, as well as the times when the percentage of speeding is at its greatest. City staff will provide the speed data to the O.P.P. as soon as the data becomes available. The City of Orillia's webpage provides a link to the O.P.P. website which allows a resident to report a traffic complaint. Orillia.ca/reportspeeding

3 TRAFFIC CALMING MEASURES

3.1 Measures Considered for Use in Orillia

The Canadian Guide to Neighbourhood Traffic Calming identifies traffic calming techniques that are commonly used in Canada. This section of the policy identifies the traffic calming measures that are appropriate for the City of Orillia. Some traffic calming measures may be considered for both local and collector roadways, whereas others will be specific to one type of roadway.

3.1.1 Vertical Deflection

This section describes traffic calming measures that cause a vertical deflection of vehicles. These types of measures discourage short-cutting or through traffic to varying degrees and may also reduce vehicle speeds, reduce conflicts and enhance the neighbourhood environment. See Appendix A.

- Raised Intersections
- Raised Crosswalks
- Seasonal Speed Cushions

3.1.2 Horizontal Deflection

This section describes traffic calming measures that cause a horizontal deflection of vehicles. These types of measures discourage short-cutting or through traffic to varying degrees and may also reduce vehicle speeds, reduce conflicts and enhance the neighbourhood environment. See Appendix A.

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Types of horizontal deflection:

- Chicane
- Curb Radius Reduction
- Lateral Shift
- Traffic circle/traffic button/mini-roundabout

3.1.3 Roadway Narrowing

This section describes traffic calming measures which cause a narrowing of the road. These measures are intended to increase drivers' feeling of "confinement", resulting in reduced speeds. See Appendix A.

Types of Roadway Narrowing:

- Curb Extensions
- On-Street Parking
- Raised Median Islands
- Road Diet
- Knock Down Posts/Flexible Delineators

3.1.4 Pavement Markings

Pavement marking measures can influence drivers to reduce speed by drawing attention to a specific area or information, or by creating optical effects that create the impression that the driver's speed is increasing. See Appendix A.

Types of Pavement Markings

- Full-Lane Transverse Bars
- Peripheral Transverse Bars

3.1.5 Common Traffic Calming Misuses and Misunderstandings

There has been a significant amount of knowledge gained through research and studies about the implementation of traffic calming measures that provide success to the applicable roadways. The following measures are not acceptable for traffic calming:

All Way Stop (unwarranted):

Unwarranted all way stops do not act as effective traffic calming measures due to the following:

- Traffic speed increases between stop signs;
- Reduced compliance adhering to stop signs;
- Increased rear-end collisions and driver frustration; and
- Requires additional enforcement from police.

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40km/hr Speed Zones:

Artificially reduced speed zones are not conducive to traffic calming for the following reasons:

- Reduced driver compliance;
- Pedestrians often perceive roadways with reduced speeds to be safer, providing a false sense of safety; and
- Compliance with artificially reduced speeds is achievable through police enforcement and presence.

'Children at play' Signs:

Signage warning motorists of children at play are ineffective for providing traffic calming measures for the following reasons:

- 'Children at Play' signs can provide residents with a false sense of security; and
- Children playing in the streets, while common, is dangerous.

Speed Limit Sign:

Speed limit signs do not act as traffic calming measures for the following reasons:

- Posted speed limits for roadways are typically established based upon engineering criteria in relation to roadway characteristics;
- Posted speed limits not matching characteristics of the roadway lead to motorist frustration and foster aggressive driving behaviours;
- Posted speed limits should be consistent to maintain a level of credibility and compliance throughout the City; and
- Speed limits are enforced through police presence, thus requiring additional police resources.

Rumble Strips:

Rumble strips are raised, milled-in, rolled-in, and formed pavement sections that are closely spaced along a roadway in regular intervals allowing vehicles traveling over them to be alerted through both noise and vibration. The purpose of rumble strips is to caution inattentive motorists of potential danger.

Rumble strips do not constitute as a traffic calming measure due to the following:

- Rumble strips become less effective if overused;
- Effect winter maintenance;
- They create additional noise for nearby residents; and
- Rumble strips require additional maintenance.

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Speed Bumps:

Speed bumps are vertical obstructions that are often found in privately owned parking lots as they are designed for a speed that is much lower than a typical posted speed limit along a public roadway. Speed bumps are not to be mistaken for speed humps or cushions. Speed bumps provide inadequate traffic calming for the following reasons:

- Speed bumps are not designed for public roadways;
- Traffic speeds between speed bumps generally increases;
- Speed bumps can increase response times for emergency vehicles;
- Speed bumps can reduce the life of the asphalt;
- Speed bumps require maintenance and additional staff resources; and
- Speed bumps lead to increased noise for nearby residents.

3.1.6 Considerations

Prior to implementing traffic calming measures, it is important to investigate an area greater than the identified area. The traffic calming plan should encompass a wide enough geographical area to consider all impacted modes of traffic and all rerouted traffic that would be caused by the implementation of traffic calming measures.

Holistic planning will reduce the likeliness of solving one problem only to shift it to another area. Holistic planning will also provide improvements that are harmonious, considers safety for all modes of traffic, as well as the community aesthetics.

3.2 Measures Considered for Roads Ineligible for Traffic Calming

Roads that do not meet the initial screening criteria defined under Section 4.1, Step 1: Initiate Traffic Calming Request, or do not meet the warrants outlined in Section 4.4, Step 4: Data Assessment, can be considered for Front Line Mitigating Measures. This will allow for concerns to be addressed without major design changes to a roadway.

Front Line Mitigating Measures consist of:

- Speed Perception Awareness Campaign
- Speed Display Signs
- O.P.P. Enforcement
- Student Silhouettes
- Temporary Speed Cushions

Front Line Mitigating Measures often do not require public involvement such as surveys and public meetings. However, they may require monitoring and evaluation to assess their effectiveness.

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For a roadway to be eligible for Front Line Mitigating measures, the 85th percentile speed of the roadway must be at least 10 km/h above the posted speed limit, a posted speed not greater than 50km/h. If the chosen measure is Temporary Speed Cushions, then the above prerequisite applies AND there must be support from at least 51% of the affected residence.

Speed Perception Awareness Campaign

For roadways that have a perceived speeding concern where there is no evidence of a speeding problem, a Speed Perception Awareness campaign may provide some more education on speeding.

The campaign will be organized by staff with consultation with the perspective Ward Councillor and there must be a minimum of five residents in attendance. The campaign will include a demonstration by an O.P.P. officer for the residents on the street with the perceived speeding concern. The demonstration would include a driver driving at random speeds (above, below and at the speed limit) while residents have the opportunity to suggest the perceived speed of the vehicle.

The officer will provide education and data from the radar gun. This will allow residents to appropriately identify speeding.

Speed Display Signs

Speed Display Signs, or Driver Feedback Signs, are an effective tool to assist with temporary traffic calming measures in a neighbourhood. Vehicle speeds are displayed on the board as the vehicle approaches the sign; this creates awareness and encourages drivers to slow down.



O.P.P. Enforcement

Residents are encouraged to use the O.P.P. reporting tool. The reporting tool can be completed online through the City of Orillia website. This tool will guide you to the O.P.P. website where you will be able to report a speeding concern. Please see the link below to report a complaint.
www.orillia.ca/reportspeeding

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Student Silhouettes

A cut-out of a student silhouette can be placed in the boulevard to assist in reducing the speeds of vehicles. Signs can be moved around to different locations that have been identified as being in need of traffic calming. It is not the intent of the silhouettes to be left in the same spot for long periods of time. Drivers tend to become complacent if they continue to see the same sign with no evidence. For example, if a 'children at play' sign is left out all day and all night for weeks and drivers never see children in the area, they will begin to ignore those signs, causing more danger to children.



Temporary Speed Cushions

Temporary Speed Cushions are defined as a raised area on a road but does not cover the entire width of the road. The width is designed to allow a large vehicle, such as a bus to straddle the cushions, while normal vehicles will have at least one side of the vehicle deflected upward. Speed cushions are intended to produce enough discomfort to limit passenger vehicle travel speeds yet allow the driver to maintain vehicle control. Temporary Speed Cushions require holes to be drilled into the asphalt and must be removed each winter.

4 TRAFFIC CALMING PROCESS

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

4.1 Step 1: Initiate Traffic Calming Request

Residents with traffic related concerns are instructed to submit their written request to investigate traffic calming within their neighbourhood to the City. City staff will then conduct a brief preliminary assessment to determine if the requested roadway meets the

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following Initial Screening Criteria. Traffic calming measures would only be considered on roads that satisfy the following criteria: See Appendix B

- Must be a Local or Collector Road as identified in the City of Orillia Official Plan and/or the City’s Multi-modal Transportation Master Plan;
- Must have a minimum 500 Annual Average Daily Traffic (AADT);
- The posted speed limit shall not be greater than 50 km/h;
- All reasonable efforts have been made to address the concerns utilizing other means including engineering, education and enforcement tools;
- Roadway must be assumed and maintained by the City of Orillia;
- Zoning should be primarily residential in nature;
- Road grade must be less than 5%;
- No traffic calming measures, or studies have been completed in the previous three-years;
- Requested street or section of street must be a minimum of 150m in length; and
- Must be a two-lane roadway.

Following this initial review, City staff will inform residents as to whether 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, as well as a copy of the City’s Traffic Calming Neighbourhood Petition (see **Appendix C**).

For locations not meeting the above-noted initial screening criteria, or the criteria required for Front Line Mitigating Measures, the applicant will be notified, and no further studies may be completed for three (3) years, unless new information is brought forward.

4.2 Step 2: Neighbourhood Petition

After it has been determined that the requested location meets the initial screening criteria, staff will notify the proponent(s) and advise them that the next step is a Traffic Calming Request form and a neighbourhood petition. Staff will provide a copy of the petition to the proponent *via* either email or regular mail, dependent on the proponent’s preference.

The petition must contain an indication of support from at least 51% of the households with direct frontage or flankage onto the section of roadway that has been identified as the location for the potential implementation of traffic calming measures, as defined by DSE staff. Each household is represented by one signature, regardless of the number of people in the household. Failure to meet the 51% support level will result in termination of the investigation; meeting the required 51% support level will trigger the

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commencement of a traffic calming investigation. If the 51% support is not achieved, staff will notify the proponent(s) that the investigation has been terminated via their preferred means of communication and no further studies may be completed for three (3) years, unless new information is brought forward.

4.3 Step 3: Data Collection

If the requested location meets the initial screening criteria and the petition results indicate that there is at least 51% support, data collection and analysis will commence. The collection of traffic data, as deemed necessary by DSE 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 to quantify and qualify the reported 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 if the request relates to shortcutting traffic, and historical site-specific information.

Data collection methods may include:

- Vehicle volume count over an eight-hour period to determine the Average Daily Traffic (ADT);
- Speed study to determine existing speed data;
- Review of collision history for the most recent three (3) years;
- Study to quantify cut-through traffic;
- Review of existing roadway conditions (i.e., pavement condition, signage, road markings);
- Pedestrian activity;
- Presence of sidewalks on one or both sides of the road segment;
- Presence of pedestrian generators, such as schools, senior residents, playgrounds, etc.;
- History of traffic operations for the area within the last five (5) years; and
- Stopping study to determine compliance with vehicle stoppage at posted signage.

If the implementation of traffic calming could result in undesirable traffic displacement onto parallel roadways, 'before' traffic volume data will be collected as deemed necessary by DSE staff. This data will then be utilized to determine if corrective action is required on parallel streets after comparing the 'before' and 'after' traffic volume.

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Once collected and summarized, the data will be utilized in the overall assessment to determine if there is a need for traffic calming measures. This system will also assist in ranking the priority for locations of consideration. Locations with extremely high overall points will be prioritized.

4.4 Step 4: Data Assessment

Using the data collected in Step 3 and the Assessment Thresholds noted below, staff will determine through a point system if the location warrants traffic calming measures. This point system can be seen in **Appendix D**.

Assessment Thresholds

The minimum number of points needed to proceed with the implementation of traffic calming measures differs based on the road classification:

- Local Road minimum 25 points; or
- Collector Road minimum 40 points.

Should a location fail to meet these requirements, residents will be notified *via* email or regular mail, whichever means of communication the proponent has chosen and the investigation for traffic calming measures will discontinue. Locations failing to meet the threshold requirements are not eligible for re-evaluation for a period of three (3) years, unless new information is brought forward.

4.5 Step 5: Design Considerations and Community Feedback

4.5.1 Selection of Traffic Calming Measure

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 along with engineering judgement.

4.5.2 Stakeholder Consultation

Staff will provide the preferred design to the relevant stakeholders (eg. emergency services, road maintenance department, transit services, etc.). Comments from the potentially affected services will be solicited and feedback with respect to possible

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impacts will be encouraged. As required, City staff will work with stakeholders to modify the design, as necessary. If modifications are not able to remedy agency concerns, the traffic calming process will be discontinued, and residents will be notified. This road will not be eligible for re-evaluation for a period of three (3) years, unless new information is brought forward.

4.5.3 Community Consultation

Public Notice and Meeting

Staff will host a public information meeting to present the purpose, objectives and implementation process of traffic calming in general. Staff will then present and explain the rationale behind the specific preferred traffic calming design. The public meeting will provide residents with an opportunity to become involved in the process, learn more about the proposed traffic calming treatment(s) and to provide their feedback.

Notification of the public meeting may be held virtually, and will be published on the City's website, social media, and weekly bulletin.

Community Support Survey

Based on input received from emergency, transit and maintenance services as well as from the public at the public meeting, the preferred design may be modified. The objective of the community 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.

Staff will define the survey canvas area. As part of this process, surrounding roads may be identified as part of the investigation. As a minimum, households with direct frontage onto the roadway to be investigated will be surveyed, in addition to each property whose side yard abuts the subject roadway section. Households that do not directly front the subject roadway, but who have no other option but to use the section of roadway where traffic calming is being proposed (e.g. in the case of a cul-de-sac), will not receive the survey; however a public meeting notice will be delivered to their homes.

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);

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- 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.

For the process to continue, a minimum of 25% of total surveys delivered must be returned to the City. Of the 25% returned survey's, 60% acceptance for the implementation of traffic calming must be received. This reinforces that community support is vital for the ultimate success of traffic calming.

4.6 Step 6: Finalize and Implement Plan

4.6.1 Final Design

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 recommended preferred traffic calming plan. In finalizing the preferred traffic calming plan, general consideration will be given to the various aspects of road design such as utility placement, landscaping, sign requirement and drainage.

With a recommended preferred traffic calming plan completed, detailed engineering drawings will be required. These drawings will provide a high level of detail taking into consideration, but not limited to the following:

- Surface drainage;
- Utility locations or relocations;
- Subbase requirements (i.e. granular type and thickness);
- Surface type (asphalt, concrete, decorative concrete);
- Roadway grade;
- Sightlines and sight distances;
- Adherence to Guide to Neighbourhood Traffic Calming, Transportation Association of Canada Geometric Design Guide and Town design standards;
- Requirements for warning signs and pavement markings;
- Driveway and intersection locations; and
- Cost considerations.

At this point, the feasibility of the preferred traffic calming measures will be evaluated in detail. If, during the detailed design stage, limitations are identified which challenge the feasibility of the plan, alternatives will be considered. This may include alterations or a re-development of the preferred plan. If significant or major changes to the plan are required

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due to design constraints, stakeholders and residents on the mailing list, will be consulted and notified of any changes. If staff believe that the required modifications to create the detailed design result in a significantly different final design from that which was presented to residents as part of the survey, staff may recommend another survey and/or public meeting.

4.6.2 Council and Budget Committee Notification

If approved traffic calming budget is not available, a Council Information Package (CIP) will be prepared for Council recommending the implementation of the preferred traffic calming measure. The neighbourhood and affected parties will be made aware of when and where Council will be considering the staff report. The notice will be sent to the same mailing list and/or email address list used to deliver the traffic calming survey and any other persons having requested notification throughout the process.

If the traffic calming design is such that budget monies will have to be allocated to implement, a traffic calming project budget request recommending the implementation of the recommended preferred traffic calming measures will be submitted to Budget Committee for consideration and approval.

4.6.3 Resident Notification

Staff will deliver notices to residents to inform them that traffic calming has been either approved or denied by Council on the subject roadway. The notice will be sent to the same mailing list and/or email address list used to deliver the traffic calming survey and any other persons having requested notification throughout the process. If the traffic calming plan is approved, the notice will include information about the traffic calming review process for the subject roadway and will include the following details:

- Copy of preferred traffic calming plan clearly showing locations of treatments;
- Information about where residents may review the detailed design drawings; and
- Implementation timeframe.

4.6.4 Implementation

Upon approval of Council (when required), resident notification, and sufficient funding, traffic calming measures will be implemented. Residents will be notified of implementation timelines through the contact mailing list. Where feasible, staff may decide it is beneficial to phase in the traffic calming plan using temporary or removable traffic calming measures such as pavement markings or barrels. This will allow time to examine the impact of the measures and their effectiveness before committing funding to permanent treatments.

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4.7 Step 7: Feedback, Monitoring & Evaluation

4.7.1 Monitoring and Evaluation

DSE staff will monitor the roadway to determine the effectiveness of the utilized measures and their impact on the surrounding road network. This information will be used in recommending similar measures in the future. In addition to conducting before and after speed studies, four to six (4-6) months after implementation, the City will conduct studies to assess if the traffic calming plan has resulted in significant amounts of traffic diverting to adjacent, parallel streets. These after studies will be compared with the City's 'before' studies to determine the change in traffic volume. While every attempt will be made to avoid transference of traffic onto other streets, if it is found that traffic volume has increased by greater than 15% (with a minimum of 150 vehicles), on a parallel street due to traffic calming implementation, the City will explore corrective action opportunities to remedy the situation and/or reduce the impact.

4.7.2 Removal of Traffic Calming Measures

Traffic calming devices may be removed, at the request of residents provided that at least the same level of support exists to remove as was measured for installation (25% returned surveys, with 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 two (2) years before starting the process to remove them, unless the traffic calming measures become a health and safety concern. If traffic calming devices are removed, the subject street must wait at least three (3) years before requesting a new traffic calming plan; at this point the approval process will start over.

If a request to remove a single traffic calming device, within an overall traffic calming plan, 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 City 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 City will mail out a notice to the same mailing list and/or email address list used to deliver the traffic calming survey and any other persons having requested notification throughout the process and advertise on its website and in local newspapers informing of its decision to remove traffic calming measures.

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4.8 Local Improvement Charges

Local Improvement Charges (LICs) are used within municipalities to fund local improvements, infrastructure and traffic calming projects. If an application does not meet the requirements set out in the City of Orillia Traffic Calming Policy 2.6.1.1, and residents would like to move forward with the implementation of a traffic calming measure, they may do so at their own expense. The costs associated with the implementation will be distributed amongst the benefitting property owners through the LICs. This can be done under the following conditions:

- Must be a Local/Collector road
- A neighbourhood petition with 51% support
- A notice must be sent to all impacted locals
- A public information meeting must take place

The steps to implement the traffic calming measure will be the same as laid out in Policy 2.6.1.1 and follow the steps as if the application had passed the assessment threshold.

If the above conditions are met, the resident(s) may request City staff to move forward with the selection and implementation of a traffic calming measure as laid out in Policy 2.6.1.1. This will be done through funds raised from the residents by the Municipality through a LIC and tax levy dollars are not used.

5 RANKING OF TRAFFIC CALMING PROJECTS

The point assessment system will be used to prioritize locations for consideration. Those locations with an extremely high point assessment will be given priority based on the quantitative nature of the point assessment system. Depending on funding availability, locations will be selected based on the point system with those locations with the highest points constructed first. If funding does not permit all locations to be constructed in one year, roadways will be carried forward to the next year when they will then be re-prioritized to include any new locations. The point assessment system can be found in **Appendix D**. The traffic calming location with the most amount of points is prioritized first.

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The following appendices are attached to this policy:

- Appendix A Traffic Calming Measures for the City of Orillia
- Appendix B Traffic Calming Request Form
- Appendix C Traffic Calming Neighbourhood Petition Form
- Appendix D Traffic Calming Point Assessment System

(R. 2013-390 13.12.16)
(R. 2014-42 14.03.17)
(R. 2014-231 14.12.15)
(R. 2018-159 18.08.16)
(R. 2021-97 21.07.19)
(R. 2022-109A 22.08.25)

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Appendix A TRAFFIC CALMING MEASURES

This section of the policy provides a brief description of traffic calming techniques that are appropriate for use within the City of Orillia.

1.1 Measures Considered for Use in Orillia

The Canadian Guide to Neighbourhood Traffic Calming (“Guide”) identifies traffic calming techniques that are commonly used in Canada. However, the Guide notes that not all measures that have been used for traffic calming purposes are appropriate. Some measures, such as signing (stop signs and maximum speed signs) and rumble strips/textured pavement, should not be used for traffic calming purposes. Although effective for other purposes, these measures have proven to be less effective for traffic calming and are therefore not recommended for use as traffic calming techniques in the City of Orillia.

This section of the policy identifies the traffic calming measures that are appropriate for the City of Orillia. Some traffic calming measures may be considered for both local and collector roadways, whereas others should be used only on one type of roadway.

Other factors affecting the applicability of traffic calming measures in Orillia include access for emergency vehicles, transit service, and ongoing maintenance of roadways. Measures that are not suitable for primary emergency response and transit routes are identified in the table.

1.2 Vertical Deflection

- Raised Intersections
- Raised Crosswalks
- Seasonal Speed Cushions

Raised Intersections

A raised intersection is an intersection, which may include crosswalks, constructed at a higher elevation than the adjacent approach roadways. The purpose of a raised intersection is to reduce vehicle speeds, better define crosswalk areas, and reduce pedestrian-vehicle conflicts.



Applications: pedestrian safety, stop compliance issues, speeding

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Advantages:

- Reduction in 85th percentile speed up to 10 km/h
- Pedestrian area is better defined and reduces conflict up to 35%
- Can reduce traffic noise
- No effect on bicycle riding, on-street parking, street sweeping and police enforcement

Disadvantages:

- Slows emergency response
- May slightly affect transit routes
- Not to be used on dedicated emergency access routes



Raised Crosswalk

A raised crosswalk is a marked pedestrian crosswalk at an intersection or mid-block location constructed at a higher elevation than the adjacent roadway. The purpose of a raised crosswalk is to reduce vehicle speeds, improve pedestrian visibility, and reduce pedestrian-vehicle conflicts.

Applications: pedestrian safety, speeding

Advantages:

- Reduction in 85th percentile speed from 5 km/h to 13 km/h
- Reduction of 25% of the traffic volume on the street
- Pedestrian area is better defined and reduces conflict up to 35%
- Reduces traffic noise
- No effect on bicycle riding, on-street parking, street sweeping and police enforcement

Disadvantages:

- Slows emergency response
- May slightly affect transit routes
- May result in a false sense of security for pedestrians
- Not to be used on dedicated emergency access routes

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Seasonal Speed Cushions

Speed cushions are defined as a raised area on a road but does not cover the entire width of the road. The width is designed to allow a large vehicle, such as a bus to straddle the cushions, while normal vehicles will have at least one side of the vehicle deflected upward. Speed cushions are intended to produce sufficient discomfort to limit passenger vehicle travel speeds yet allow the driver to maintain vehicle control.



Applications: speeding, short-cutting traffic

Advantages:

- Reduction in 85th percentile speed up to 8 km/h
- Reduction of up to 30% of the traffic volume on the street
- Reduces traffic noise
- No effect on bicycle riding, on-street parking, street sweeping and police enforcement

Disadvantages:

- Slows emergency response
- May slightly affect transit routes
- Not to be used on dedicated emergency access routes
- Must be removed each winter and replaced each spring
- Can reduce the life of the asphalt

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1.3 Horizontal Deflection

- Chicane
- Curb Radius Reduction
- Lateral Shift
- Traffic Circle/traffic button/mini-roundabout



Chicane

A Chicane is a series of curb extensions on alternating sides of a roadway, which narrow the roadway and require drivers to steer from one side of the roadway to the other to travel through the Chicane. Multiple series of curb extensions can be used.

Applications: short-cutting traffic, speeding

Advantages:

- Reduction in 85th percentile speed between 6 and 11 km/h
- Reduction of up to 20% in traffic volume on the street
- Traffic noise may be reduced
- No effect on residence access and police enforcement

Disadvantages:

- May slightly affect emergency response time
- Loss of on-street parking
- Negatively effects winter maintenance and street sweeping
- Drainage gutters must be swept manually
- May introduce head-on collision hazards
- Some motorists may attempt to travel at higher speeds by crossing the centreline
- May affect transit routes

Applications: short-cutting traffic, speeding

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Curb Radius Reduction

The Curb Radius Reduction is the reconstruction of an intersection corner to a smaller radius. This measure effectively slows down right-turning vehicle speeds by making the corner ‘tighter’ with a smaller radius. A corner radius reduction may also improve pedestrian safety by shortening the crossing distance. This type of measure is often limited to specific situations where the existing intersection geometry would allow the reconstruction. In addition, curb radius reductions should not be used on transit routes requiring a right turn.



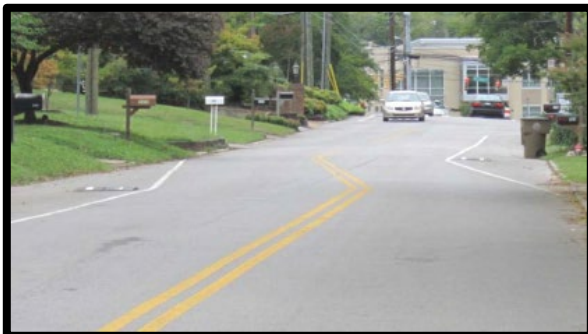
Applications: slow down right-turning vehicles, reduce crossing distance for pedestrians, improve visibility of pedestrians

Advantages:

- **Speed reduction for right turning vehicles**
- **Improved visibility, may reduce pedestrian-vehicle conflicts**
- **No effect on bicycle riding, on-street parking, street sweeping and police enforcement**

Disadvantages:

- **Slows emergency response**
- **Should not be used on transit routes**
- **Large axle vehicles are unable to negotiate the turn without driving over the sidewalk**
- **Not to be used on dedicated emergency access routes**



Lateral Shift

A Lateral Shift in a roadway occurs where an otherwise straight section is redesigned using pavement markings or curb extensions to create a curvilinear alignment (a ‘jog’) in the roadway like a chicane. This effect can also be achieved with the use of a central island.

Applications: speeding

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Advantages:

- Can accommodate higher traffic volumes
- Easily negotiable by emergency vehicles
- No effect on bicycle riding, on-street parking, street sweeping and police enforcement

Disadvantages:

- Must be designed carefully to discourage drivers from deviating out of the appropriate lane
- Decrease in speed data not available

Traffic Circle/Traffic Button/Mini-Roundabout

A traffic circle/traffic button/mini-roundabout are raised islands placed in intersections, forcing traffic to circulate around the raised middle island in a counter-clockwise direction. Traffic circles are typically controlled by YIELD signs on all approaches. Traffic circles prevent drivers from speeding through intersections by impeding the through movement.



Applications: speeding; short-cutting traffic

Advantages:

- Reduction in 85th percentile speed between up to 14 km/h
- Reduction of up to 20% in traffic volume on the street
- Collision rate can be reduced by up to 30%
- Can reduce traffic noise
- No effect on bicycle riding, on-street parking, street sweeping and police enforcement

Disadvantages:

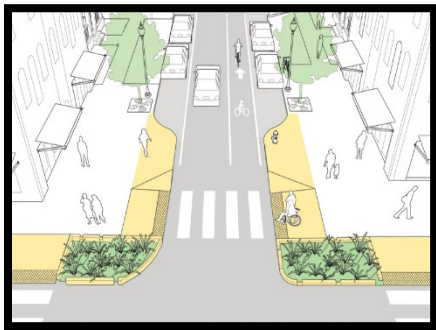
- Emergency response time delay between 1.3 and 10.7 seconds
- May force active transportation and transit vehicles into crosswalk area increasing potential for pedestrian-vehicle conflicts
- May require removal of on-street parking
- Large surface area required

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1.4 Roadway Narrowing

- Curb Extension
- On-Street Parking
- Raised Median Island
- Road Diet
- Knock Down Posts/Flexible Delineators



Curb Extension

A curb extension is a horizontal intrusion of the curb into roadway resulting in a narrow section of the roadway. The curb is extended on one or both sides of the roadway to reduce its width to as little as 6.0 m for two lane, two-way traffic. The purpose of a curb extension is to reduce vehicle speeds, reduce crossing distance for pedestrians, increase visibility of pedestrians.

Applications: speeding, pedestrian safety

Advantages:

- Reduction in 85th percentile speed between 2 and 8 km/h
- Reduction of pedestrian crossing distance
- Better mutual visibility between pedestrians and motorists

Disadvantages:

- Increased complexity and safety concerns with bicycle lanes
- Potential loss of on-street parking

On-street Parking

On-street parking is the reduction of the roadway width available for vehicle movement by allowing motor vehicles to park adjacent and parallel to the curb. The effect of using on-street parking to narrow the effective roadway space is to reduce vehicle speeds and to reduce possible short-cutting traffic.

Applications: speeding, short-cutting traffic



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Advantages:

- Parked vehicles provide a buffer between traffic and pedestrians on sidewalks
- Traffic noise may be reduced due to reduction in traffic volumes or speeds
- No effect on resident access and police enforcement

Disadvantages:

- On-street parking may reduce mutual visibility for pedestrians crossing
- Parked vehicles may obstruct street sweeping and snow removal
- Parked vehicles may obstruct driveways

Raised Median Island

A raised median island is an elevated median constructed on the centreline of a two-way roadway to reduce the overall width of the adjacent travel lanes. The purpose of a raised median island is to reduce pedestrian-vehicle conflicts.

Applications: speeding, pedestrian safety



Advantages:

- Reduction in 85th percentile speed between 3 and 8 km/h
- Can function as a pedestrian refuge
- No effect on snow plowing, street sweeping or police enforcement

Disadvantages:

- May slightly effect cyclists
- May require additional right-of-way and/or removal of on-street parking

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Road Diets

A road diet is a reconfiguration of a roadway where the number of travelled lanes and/or the effective width of the road is reduced in order to allocate the reclaimed space for other uses, such as wider sidewalks, turning lanes, bus lanes, pedestrian refuge islands, bike lanes, parking, etc.

Applications: speeding

Advantages:

- Reduction in 85th percentile speed between 5 and 12 km/h
- Reduction of 25% in the number of collisions per kilometer

Disadvantages:

- Can delay emergency response time due to traffic congestion

Knock Down Posts/Flexible Delineators

The use of vertical treatments such as flexible post-mounted delineators or raised pavement markers to create a centre median could be used to give drivers a perception of lane narrowing and create a sense of constriction.

Applications: speeding



Advantages:

- Reduction in 85th percentile speed up to 5 km/h
- Separation of traffic has the potential to reduce collisions
- Collapsible design is able to withstand impact with a vehicle

Disadvantages:

- May require regular maintenance with collection of debris around posts
- Must be removed each winter and replaced each spring
- Can reduce the life of the asphalt

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1.5 Pavement Markings

- Full-Lane Transverse Bars
- Peripheral Transverse Bars



Full-Lane Transverse Bars

Full-lane transverse bars are a series of parallel pavement markings which extend across most of the travelled lane width. The series of markings may be placed closer together with distance to create the illusion that a vehicle's speed is increasing to alert the driver of the need to reduce speed.

Applications: speeding

Advantages:

- Reduction in 85th percentile speed between 5 and 15 km/h
- Can be implemented rapidly
- No adverse effect on vehicle operation
- No impact on emergency vehicles, police vehicles, or street/winter maintenance

Disadvantages:

- Pavement markings will require regular maintenance, increased cost if placed in the wheel path of vehicles
- May be less effective in winter months due to snow/ice cover
- Pavement markings are not visible from significant distances upstream

Peripheral Transverse Bars

peripheral transverse bars are a series of parallel pavement markings along the edge of the travelled land widths. The series of markings may be placed closer together with distance to create the illusion that a vehicle's speed is increasing to alert the driver of the need to reduce speed. Peripheral transverse bars are similar to full-lane transverse bars but require less maintenance of pavement markings.



Applications: speeding

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Advantages:

- Reduction in 85th percentile speed between up to 8 km/h
- Can be implemented rapidly
- No adverse effect on vehicle operation
- No impact on emergency vehicles, police vehicles, or street/winter maintenance

Disadvantages:

- Pavement markings will require regular maintenance but not as frequently compared to full-lane transverse bars
- May be less effective in winter months due to snow/ice cover
- Pavement markings are not visible from significant distances upstream

1.4 Signage

Signage prohibiting turns and through movements should only be used as an alternative in situations where appropriate traffic calming measures cannot be used. The use of signage without accompanying physical traffic calming devices should be avoided where possible, as this can create an enforcement problem and, as a result, can be costly in terms of police resources. There is, however, one type of signage that can be used to complement the physical devices installed through a traffic calming plan.

“Traffic-Calmed Neighbourhood” signage is used to notify motorists and other road users that they are about to enter a neighbourhood that has been ‘calmed’ by the installation of various traffic calming measures. Although this signage alone does not have any significant impact on driver behaviour, it aims to make the motorist aware of the conditions they are about to enter and could potentially act as a ‘deterrent’ for motorists looking for a short-cut. Traffic calmed signs will accompany all City implemented traffic calming measures.

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Appendix B TRAFFIC CALMING REQUEST FORM

Applicant Information	
Name:	Phone Number:
Street Address:	Postal Code:
E-mail Address:	
Location Information	
Street Name:	
From:	To:

Reason for Request (check all that apply):

- Speeding
- Short-cutting
- Traffic Volume
- Collisions
- Stop Compliance
- Other


Would you like to be contacted via mail or email? (please circle)

Comments:

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Appendix C Traffic Calming Neighbourhood Petition Form

				
City of Orillia Environmental Services and Operations, Development Services and Engineering				
TRAFFIC CALMING POINT ASSESSMENT				
Traffic Data				
	<u>Feature</u>	<u>Range</u>	<u>Criteria</u>	<u>Total</u>
1a.	85 th % Speed	0 to 35	5 points for every 2km/h that the 85 th percentile speed is greater than 10 km/h over the speed limit	
2.	High Speed	0 to 5	5 points if at least 5% of the daily traffic exceeds the posted speed by 20 km/h	
3.	Volume	0 to 20	Local Roadways: 5 points for every 1,000 ADT Collector Roadways: 5 point for every 1,500 ADT	
4.	Short-Cutting Traffic	0 or 15	5 points if there is a presence of 25% or more short-cutting traffic, additional 5 points for every 10% increment above 25%.	
5.	Collisions	0 to 10	1 point for every collision/year over a 3-year period; 2 points for every collision/year over a 3-year period if the collision includes a pedestrian or a cyclist.	
Road Characteristics				
	<u>Feature</u>	<u>Range</u>	<u>Criteria</u>	<u>Total</u>
6.	Sidewalks	0 to 10	10 points for no sidewalks with evidence of pedestrian activity, 5 points for sidewalks on only one side	
7.	Pedestrian Generators	0 to 15	5 points for each nearby* pedestrian generator such as a school, playground, community centre, libraries, retail centres, school bus routes etc. (*Nearby = must have direct connection to subject roadway.)	
Total =				
Does the location meet the minimum requirements? <input type="checkbox"/> YES <input type="checkbox"/> NO				
Local road = minimum 25 points / Collector = minimum 40 points				

