

NORWICH TOWNSHIP TRAFFIC CALMING GUIDE

TOWNSHIP OF NORWICH



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1 Introduction

1.1 Background

The Township of Norwich is responsible for ensuring that roadways serve the needs of the community and all users, including cars, pedestrians (including those with accessibility needs), cyclists, emergency vehicles and snow removal equipment. Ensuring roadways are safe may involve the implementation of traffic calming measures and speed management.

Traffic calming and speed management are a significant challenge for many communities in Canada. Communities with a mix of both urban and rural areas often find this to be exceptionally challenging. Roads often provide both high-speed travel over long distances within a built-up area; however, the same road may accommodate local traffic, pedestrians, and on-street parking. This convergence of road purposes presents both an enforcement challenge and a safety concern for the public and the community. Speed management is also a concern on connector roads with strip development, as well as within residential neighbourhoods.

Neighbourhoods and urbanized areas generally experience higher volumes of pedestrians, and therefore require more stringent consideration for the safety and well-being of the residents.

Addressing speed issues through law enforcement alone often leads to temporary compliance at a significant cost. One way to reinforce the need to reduce speed is to change the visual appearance of the road by installing traffic calming measures that communicate to drivers that the function of the road is changing.

The Township of Norwich receives concerns from residents pertaining to speeding, traffic volumes and/or cut through traffic on Township roads. The Township responds by investigating the potential for neighbourhood traffic calming measures.

This Guide outlines the prerequisites, process, and criteria to consider when traffic calming concerns are voiced by residents within the Township and how the Township proceeds when a traffic calming request is brought forth. While the Guide outlines the process, the recommendations and implementation of measures with budget impacts will only be undertaken upon direction of Council by the passing of the annual budget or resolution(s) with the associated funding.

1.2 Purpose

The purpose of this Guide is to provide Township staff with a systematic procedure for the initiation, investigation and implementation of traffic calming measures within residential neighbourhoods and on connector roads, within the Township of Norwich. This Guide does not apply to the following: rural collector roads (outside of settlement areas) or arterial roads (outside of settlement areas) as they are intended to serve higher traffic volumes and higher speeds, roads located within Township boundaries that are not owned by the

Township (i.e., County Roads or Provincial Highways) or roads or road segments with a speed posted above 61 km/hour. This guide is NOT to be used for requests for posted speed reductions.

These requests shall go through a request for speed reduction and reviewed under a separate process.

This Guide also ensures that there is a formal process defined by which all sites/traffic calming requests can be evaluated against uniform criteria to ensure consistency throughout the Township.

The Traffic Calming Measures Guide has also been developed to act as an educational tool for residents, encourage public involvement and provide a standard throughout the Township.

1.3 Potential Liability

Liability resulting from the introduction of traffic calming measures on public roads has been a concern for many municipalities. Although these concerns continue to exist, experience has proven that the most effective means of reducing the potential for litigation is to establish and follow a set implementation procedure. This procedure should include: an approved guide, a defined process, specific design guidelines and standards, a uniform approach to advise road users through standard signs and markings, and a prudent maintenance program that addresses the additional attention required in traffic calmed areas. Although the implementation procedure may not completely eliminate potential liability, it is believed that the benefits associated with traffic calming far outweigh the risks involved.

1.4 Traffic Calming Defined

Traffic calming as defined by the Institute of Transportation Engineers (ITE) Subcommittee as "the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users." Traffic calming measures combined with engineering, educational and enforcement tools can significantly improve the safety of neighbourhoods and roads. The primary purpose of traffic calming is to reduce high traffic speeds within residential neighbourhoods and to improve safety for all road users.

1.4.1 Objective of Traffic Calming

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

- Increase the Safety of Neighbourhoods

Through the use of physical measures to alter driver behavior, traffic calming can

improve safety on neighbourhood streets and within rural communities. The resulting reduction in volume and speed creates a safer environment for all residents including cyclists, children, persons with accessibility needs, and seniors.

- **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.

- **Restore Streets to the Intended Function**

The intended function of a local road is to accommodate low to moderate volumes of traffic travelling at low 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. Collector roads within the Township are intended to provide access to properties and to provide linkages between local roads and other collector and arterial roads at lower operating speeds.

- **Maintain Access Routes for Emergency Services, Public Transit and 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.

- **Promote Public Participation and 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 less effective countermeasures.

1.4.2 General Advantages and Disadvantages of Traffic Calming

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

Advantages:

- Reduced motor vehicle speeds
- Reduced traffic volumes
- Discouragement of through traffic
- Improvement of overall road safety
- Improvement of neighbourhood livability
- Reduced conflicts between road users

Disadvantages:

- Increased emergency vehicle response time
- Reduced ease of access in and out of neighbourhoods
- Results in expensive solutions (time and resources)
- Diverts traffic onto neighbouring roads
- Increases maintenance time and costs (i.e., snow clearing, garbage pick-up)
- May be visually unattractive and/or cause increased noise pollution

1.4.3 Common Traffic Calming Misuses and Misunderstandings

In consideration of the Township objectives in implementing a Traffic Calming Policy and Guide, and in recognizing that a large extent of the Township's road system is within a rural environment, the following traffic calming measures will NOT be considered when a public request is received.

Traffic calming typically does not include the following:

- All Way Stop (unwarranted)
- 40km/h Speed Zones
- "Children at Play" Signs
- Speed Limit Sign
- Rumble Strips
- Speed Bumps

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
- Requires enforcement from police

40km/hr Speed Zones

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

- Reduced driver compliance to posted speeds
- Pedestrians often perceive roadways with reduced speeds to be safer, providing a false sense of safety
- 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
- Children playing in the streets, while common, is dangerous and strictly prohibited under the Highway Traffic Act

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 Township
- Speed limits are enforced through police presence, thus requiring additional police resources

Rumble Strips

Rumble strips are raised 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
 - They create additional noise for nearby residents
 - Rumble strips require additional maintenance

Speed Bumps

Speed bumps are vertical obstructions that typically measure between 75-100 mm in height and 3m in length and 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. 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 require maintenance and additional staff resources
- Speed bumps lead to increased noise for nearby residents

2 Traffic Calming and Speed Control Measures

There are different classifications of traffic calming and speed control measures: physical vertical deflection, horizontal traffic calming measures, physical obstruction, and passive and mitigating measures. A description of each classification is described below:

Physical Vertical Deflection

Physical vertical traffic calming measures provide a vertical obstruction that vehicles are able to travel over. The change in pavement height leads motorists to reduce speed prior to traversing the object. It should be noted that vertical traffic calming measures are not preferred as they can increase emergency vehicle response time and cause additional challenges for snow removal equipment. All vertical traffic calming measures shall be appropriately signed and marked in accordance with reference material provided by the Institute of Transportation Engineers (ITE) and the Transportation Association of Canada (TAC).

Vertical traffic calming measures are typically more effected when installed in series. The deceleration and acceleration of a vehicle, while negotiating a series of vertical traffic calming measures, is dependent on the number of and

spacing of the installation of the traffic calming devices. Vertical traffic calming measures can also lead to increased cut-through traffic which diverts on to parallel streets. Consideration of vertical traffic calming measures should include improving the traffic flow in the neighbourhood as a whole.

Vertical traffic calming measures include the following:

- Speed Cushion
- Speed Tables
- Speed Humps
- Raised Sidewalks
- Raised Crosswalks
- Raised Intersections

Horizontal Traffic Calming Measures

Horizontal traffic calming measures incorporate raised islands and curb extensions to prevent vehicles from traveling at excessive speeds through straight stretches of roadway. This creates a physical perception of a narrower roadway, causing vehicles to reduce speed or to reduce speed to maneuver around the obstacle. Horizontal traffic calming measures shall be signed and marked in accordance with reference material provided by the Institute of Transportation Engineers (ITE) and the Transportation Association of Canada (TAC).

Implementing horizontal traffic calming measures can result in the diversion of traffic onto parallel streets. Consideration of horizontal traffic calming measures should include improving the traffic flow in the neighbourhood as a whole.

Horizontal traffic calming measures include the following:

- Neighbourhood Traffic Circles
- Roundabouts
- Chicanes
- Lateral Shifts
- Centre Medians
- Curb Extensions

Physical Obstruction

Physical obstructions are the most drastic traffic calming tool and are only used in cases where it has been determined that vertical or horizontal measures will not address the identified problem. Physical obstructions eliminate cut-through traffic by eliminating specific vehicle movements. It should be noted that physical obstructions are not intended to obstruct bicycle or pedestrian traffic. These

measures are typically implemented at intersections, but may be applied in other locations:

- Physical obstructions include the following:
- Directional Closures
- Raised Median through Intersection
- Right-ins/Right-outs
- Diverter
- Full Closure

Passive and Mitigating Measures

Passive traffic calming measures do not require engineering or construction of physical modifications to the roadway. Passive traffic calming measures are often lower in cost and prevent construction of permanent changes to the roadway. Physical traffic calming measures will be considered by the Township when passive measures have not alleviated valid traffic calming concerns in the neighbourhood and the Township deems them necessary.

Passive traffic calming measures include the following:

- Education
- Dynamic Speed Signs
- Targeted Speed Enforcement

2.1 Considered Measures

In recognizing that a large extent of the Township's road system is within a rural environment, the following traffic calming measures may be considered when a public request is received:

- Enforcement
- Dynamic Speed Signs
- Lane Narrowing via pavement markings
- Speed Humps
- Speed Tables
- Centre Medians
- Lane Narrowing (temporary)
- Signage
- Raised Crosswalks
- Raised Intersections
- Speed Cushions

There may be exceptions made to the above list at the discretion of the

Township. Below is a list explaining some of the commonly implemented traffic calming measures within the Township:

Enforcement

Enforcement is defined as a police presence to monitor speeds and issue tickets for violations. It is often used with other traffic calming devices to regulate behaviour and is proven to be quite effective in reducing travel speeds (provided the enforcement measures are consistent).

Advantages

- Effective capturing drivers' attention
- No impact to emergency vehicles or snowplows
- Does not affect vehicle operations
- Can be implemented immediately

Disadvantages:

- May be costly, additional revenue for tickets does not pay for officer.
- Does not provide for a continuous and consistent solution (i.e., not present for 24 hours per day and 7 days a week)

Dynamic Speed Signs

Dynamic speed signs are portable, temporary or permanent radar activated signs that instantaneously display approaching speeds for individual vehicles. The signs can also be programmed to record outgoing traffic speeds. Appropriate messages (i.e., Please Slow Down) may also be displayed.

These devices create a sense of being monitored to the driver and provide an instant notification that the speed limit is being exceeded (if such is the case).

Advantages

- Educational tool
- Positive public relations
- Effective as a temporary speed reduction measure

Disadvantages

- Relies on motorists to voluntarily comply
- Duration of effectiveness is limited
- Not accurate on multi-lane roads

Lane Narrowing through Pavement Markings

This measure narrows the travel lanes to a minimum width of 3.0 metres through the use of pavement markings (centerline and edge lines). Reduced lane widths provide a feeling of constraint, causing motorists to reduce travel speed; remaining road width would be designated as shoulder.

Transverse markings can also be painted on the shoulders provided there is sufficient hard surface to accept such.

Advantages

- Provides additional space for shoulders which may be used for other road uses
- No impact to emergency vehicles and snowplows
- Can be readily implemented and does not affect vehicle operations

Disadvantages

- Lane narrowing
- Reduces separation between oncoming vehicles
- Pavement markings require maintenance and are not visible during winter months

Seasonal or Permanent Speed Humps or Tables

Speed humps are defined as a raised area of the road, which deflects both the wheels and frame of a traversing vehicle. Typically, 80mm high and 4.0 metres wide (in the direction of travel), spaced 125 to 225 metres apart. Speed humps are used on urban residential streets and connector roads. Speed tables are flat-topped rubber mounds that cover the full width of the roadway. The ramps of the speed table are more gently sloped than speed humps and thus speed tables are less jarring than a standard speed hump and can allow larger vehicles (emergency vehicles, trucks and snowplows) to cross with reduced disruption.

Advantages

- Relatively cost-efficient
- Easy to construct
- Deters cut-through traffic
- Reduces vehicle speed

Disadvantages

- May delay emergency vehicles
- May cause damage to snow removal equipment

Centre Median

A centre median is a raised island installed in the centre of a road to reduce the overall width of the travelled lanes. They help slow traffic without affecting the capacity of the road. Raised median islands can be combined with curb extensions and/or textured crosswalks to further improve pedestrian safety. This measure may be considered on both local and collector roads.

Advantages

- Provides refuge for pedestrians
- Increases motorist awareness
- Can be designed to prohibit left turns thereby reducing traffic

Disadvantages

- May reduce on street parking
- Restricts driveway access
- Speeds may increase due to lack of left turns
- Additional maintenance if landscaped

Temporary Lane Narrowing

This measure narrows the lane width through the installation of signs and/or bollards in the roadway. Reduced lane widths create a feeling of constraint and should cause drivers to reduce their speed well traveling through the area of narrowing. More bollards can be added to further narrow the street where the road is over 12m.

Advantages

- No Impact to emergency vehicles or snowplows
- Can be readily implemented and does not affect vehicle operations

Disadvantages

- Lane narrowing
- Restricts separation between oncoming vehicles

Signage

Poor sight lines can have significant adverse effects on the overall safety of roads, whether residential streets or connector roads. Being able to properly see pedestrians/cyclists, street signs, on-coming traffic, and road geometry is of

paramount importance to maintaining safe driving conditions. Landscaping, tree trimming/removal, and road maintenance are on-going threats to road safety and need to be considered throughout the life cycle of the road. In addition, pavement markings and road signs are simple and efficient tools to make drivers aware of speed reductions ahead, speed humps, hidden intersections, etc.

Raised Crosswalk

A raised crosswalk is a speed table with crosswalk markings and signage to channelize pedestrians crossing a road. This type of calming measure raises the crosswalk to the level of the sidewalk to improve the visibility of pedestrians to motor vehicle drivers. They are trapezoidal in shape with a flat area for crossing pedestrians and ramps for the vehicle approaches traversing the raised crossing.

Neighborhood streets with recorded speeding problems and haphazard pedestrian crossing locations will benefit from this traffic calming measure. They can be used at intersections, mid- block crossings, and school crossings.

Advantages

- Relatively easy once identified
- Cost effective
- Signs and markings are easily installed

Disadvantages

- Deficiencies must be identified
- On-going maintenance

Raised Intersection

A raised intersection refers to an intersection that is entirely elevated above the travel way. It is essentially a speed table for the entire intersection. They are constructed with ramps on all vehicle approaches. Typically, they are raised to the level of the curb/sidewalk or slightly below it, creating a pedestrian area that includes the sidewalk and crosswalks.

For neighborhood streets, raised intersections are best suited for intersections with substantial pedestrian activity.

Advantages

- Enhances the pedestrian environment and increases safety at the intersection

- Eliminates need for curb drops
- Can calm two streets at once
- Can have positive aesthetic value

Disadvantages

- Impacts to drainage need to be considered in design
- Textured pavement materials can make it difficult for vision impaired to identify detectable warnings
- Less effective in reducing speeds than speed humps, speed tables, or raised crosswalks
- They are expensive

Speed Cushion

A speed cushion is a short, raised, rounded device, normally in the centre of a road lane. Speed cushions are designed to be slightly wider than a car, so car drivers need to slow down and drive over the centre of the speed cushion to reduce discomfort. Emergency vehicles are wider than cars, so they can drive over speed cushions without the need to reduce speed. Speed cushions are effective at reducing motor vehicle speeds; however, they are not as effective as speed tables or speed humps.

Advantages

- More effective than horizontal treatments at reducing speed
- Emergency vehicles can travel drive more quickly over cushions than speed humps or tables
- Can be avoided by cyclists
- Drainage should not be affected

Disadvantages

- Cars drive considerably faster over speed cushions than speed humps or speed tables
- Emergency services may oppose wider speed cushions (e.g. 1.7m wide) which are proven to be more effective at slowing down cars
- Some traffic is likely to transfer onto alternative routes, potentially causing a problem somewhere else

3 Traffic Calming Measures Guidelines

3.1 Consideration for Traffic Calming

Traffic calming measures will be considered under the following circumstances.

- When there is a demonstrated safety, speed or short-cutting traffic concern and acceptable alternative measures have been exhausted
- 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
- 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, 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 studies will be completed to assess effectiveness and the results will be communicated to the community and Council

3.2 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 community 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.

The benefit of community involvement is that it generates support for a traffic calming program and assists in the implementation of a plan without significant opposition upon completion.

Community 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 community, meetings will be scheduled and surveys delivered to residents affected by the implementation of traffic calming measures. These forms of contact will provide the community 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.

3.3 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 (2023). Where appropriate, public consultation elements of the Municipal Class EA for a Schedule B project have been incorporated 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 (2023). 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 Guide will serve as the preferred method of public notification for any traffic calming measures that involve the retirement of existing road facilities.

4 Traffic Calming Staff Review Considerations

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

4.1 Step 1: Initiate Traffic Calming Request

4.1.1 Resident Concern Submission

Residents with traffic related concerns are instructed to submit a written traffic calming request (Appendix A) to the Township. Township staff will then conduct a brief preliminary assessment to determine if the requested road and/or area

meets the initial screening criteria.

4.1.2 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 Norwich Township;
- Have a minimum length of 150 m
- Have a posted speed limit of 61 km/hour or less.

In addition, the following must also be satisfied

- All reasonable efforts have been made to address the concerns utilizing other means including education and enforcement tools
- Zoning should be primarily residential along the subject road segment
- Have had no previous studies and/or assessments within the past 36 months; however, the 36-month waiting period will be waved in circumstances where significant new information is brought forward (i.e. – doubled AADT, new subdivision, change in surface type of road, etc.).

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

4.1.3 Response to Residents

Following this initial review, the Township 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 enforcement initiatives.

For road segments that do not meet the above initial screening, staff will consider frontline mitigation measures to address neighbourhood traffic concerns. These methods may include tools such as targeted police enforcement, sign installation and pavement marking modifications. Front-line mitigation measures may require monitoring to evaluate and assess their effectiveness.

4.2 Step 2: Neighbourhood Petition Submission

Should it be determined that the neighbourhood and/or road segment meets the criteria, the neighbourhood proponent will be required to submit a written application request, accompanied by a petition; the petition form can be found in Appendix B of this Guide. The focus of the petition will centre on whether or not there is sufficient neighbourhood/local support for the Township to initiate an investigation into the need for traffic calming on the requested road.

The petition must contain an indication of support from at least 60 percent of the households with direct frontage or flankage onto the road segment 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 residing in the household. Failure to meet the 60 percent support level will result in termination of the investigation; meeting the required 60 percent support level will trigger the commencement of a traffic calming investigation. This step in the process is crucial in determining the level of concern from the residents and will prevent frivolous requests that are not supported by the remainder of the neighbourhood from consuming valuable resources.

4.3 Step 3: Data Collection

If the requested location meets the initial screening criteria and a petition result indicating that there is at least 60 percent support, 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 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 if the request relates to shortcutting traffic, and historical site-specific information.

Data collection methods may include the following:

- Vehicle volume count over a 24-hour period
- Speed study to determine existing speed data
- Review of collision data for the most recent three (3) years, if available
- 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
- Stopping study to determine compliance with vehicle stoppage at posted signage

For vehicle speeds, it is not prudent to consider the highest speed at which motorists travel. Rather, the 85th percentile speed is considered, which is the speed at which 85 percent 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 the values provided in Table 1.

Table 1: 85th Percentile Speed Considerations

Post Speed (km/h)	85 th Percentile (km/h)
40	50
50	60
60	70

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 (i.e., posted speed of 40km/h or less), the design speed is typically taken as 10km/h over the posted speed, whereas for higher speed roads (i.e., posted speed of 61 km/h or more), design speed is 20km/h greater; however, roads posted at speeds greater than 50km/h are not applicable to this Guide.

Table 2: Stopping Sight Distance Considerations

Posted Speed (km/h)	Sight Distance (m)
40	45
50	65
60	85

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. The review of data will be completed using Council approved metrics (Appendix C).

4.4 Step 4: Data Assessment

4.4.1 Basis for Assessment

The data assessment is a screening process focused on the various attributes of a road segment in order to quantify its potential need for traffic calming. By means of assigning weighted points based on the severity of certain road attributes (i.e., 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 C). Depending on funding availability, locations will be selected based on the point system; locations with the highest points will be 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.

4.4.2 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 the 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:

- Local road minimum 35 points
- Collector road minimum 52 points

4.4.3 Response to Residents

Should a location fail to meet these requirements, residents and the Ward Councilor will be notified in writing and the investigation for traffic calming measures will discontinue. However, staff will continue to address the concerns of the residents by means of the front-line mitigating measures including:

- Targeted police enforcement
- Community entrance signs "Drive slowly... think of us"

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 increase driver awareness of the speed limit and force motorists to temporarily reduce speed and comply with posted limits.

4.5 Step 5: Design Consideration and Community Feedback

4.5.1 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 2 of this Guide. 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.

4.5.2 Agency Consultation

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

4.5.3 Community Consultation

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.

Using summarized comments from the submitted petition and preliminary information about the road and surrounding area, staff will define the study area for community 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 to be investigated will be surveyed, in addition to each property whose side yard abuts the subject road segment. 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 (i.e., a cul-de-sac), will not receive the survey; however, a public meeting notice will be delivered to their homes.

Notification will be published in the local newspaper having general circulation in the project area. The purpose of this notice is to provide notification to the public regarding the meeting date, time and location of the community consultation. It will also present an opportunity to solicit comments on the alternative traffic calming measures.

4.5.4 Community Support Survey

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. 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 identified location(s)
- The preferred traffic calming designs
- A request for comments and feedback
- An indication that this is the final opportunity to modify and improve the preferred design to address any outstanding concerns and to incorporate resident inputs

In order for the process to continue, a minimum of 25 percent of total surveys delivered must be returned to the Township. Of this 25 percent, 60 percent 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 community support levels will be sent to the residents on the mailing list.

4.6 Step 6: Finalize and Implement the Traffic Calming Plan

4.6.1 Finalize the Traffic Calming Plan

Using technical data, community feedback, and in keeping with the goals, objectives and principles set out in this Guide, 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 requirement and drainage.

4.6.2 Council Notification

A report recommending the implementation of the preferred traffic calming measure will be submitted to Township Council. The neighbourhood and affected parties will be made aware of when and where Council will be considering the staff report.

4.6.3 Council Approval

Council approval will be required for the following traffic calming methods and/or devices:

- Stop Signs
- Lane Narrowing through Pavement Markings
- Seasonal Speed Humps and Tables
- Centre Medians

4.6.4 Implementation

Upon approval of Council, resident notification, and sufficient funding, traffic calming measures will be implemented. Where feasible, staff may decide it is beneficial to phase in traffic calming through the use of 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.

4.7 Step 7: Feedback Monitoring and Evaluation

4.7.1 Monitoring and 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.

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 percent returned surveys, with 60 percent 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 three (3) month trial before starting the process to remove them. If traffic calming devices are removed, the subject street must wait at 36 months before requesting a new traffic calming measure; at this point the approval process will start over. The 36-month waiting period will be waved in circumstances where new information is brought forward.

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 may 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. The Township reserves the right to remove traffic calming measures at any time, without notification if it is determined that the measures 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

Traffic Calming Request Form

Application Date	
Location of Traffic Calming Request	
Street Name	
From	
To	

Applicant Information

Name	
Phone	
Email	
Address	

Provide reasoning for request:

--

Sketch attached (if desired)

Completed Traffic Calming Request Forms can be delivered in person or by mail to the Township office, or submitted electronically:

Township of Norwich

publicworks@norwich.ca

Appendix B

Petition for Traffic Calming Measures

The purpose of traffic calming is to alter driver behaviour to encourage vehicle travel at appropriate speeds on local and collector roads. Traffic calming is successful at reducing vehicle speeds where the majority of traffic is driving inappropriately. It is not intended for locations where there is ongoing construction and changing traffic patterns, or where only a few motorists are speeding; police enforcement is the best solution in such situations.

What are the disadvantages of traffic calming?

Please be aware that traffic calming may increase both noise and air pollution, as vehicles slowdown in advance of potential traffic calming measures (i.e., speed cushion).

Should you require additional information, please review the Township of Norwich Township Traffic Calming Guide or contact the Township Office.

We, the undersigned, request a traffic calming assessment on the section of road listed below:

Location of Traffic Calming Request	
Street Name	
From	
To	

Provide reasoning for request:

Sketch attached (if desired)

BY SIGNING BELOW, YOU ARE ACKNOWLEDGING THAT YOU HAVE READ AND AGREE WITH THE REQUEST AS OUTLINED

Petition for Traffic Calming Measures

Name	Address	Phone	Email	Signature

Petition Organizer Information

Name	
Phone	
Email	
Address	

Completed petition forms can be delivered in person or by mail to the Township office, or submitted electronically:

Township of Norwich

publicworks@norwich.ca

Appendix C

Traffic Calming Point Assessment (Staff Use)

Location:		Date Compiled:		
Roadway Type:	<input type="checkbox"/> Local Road		<input type="checkbox"/> Township Connector Road	
Traffic Data				
	Feature	Range	Criteria	Total
1a.	Speed	0 to 35	<input type="checkbox"/> 5 points for every 2km/h that the field measured 85 th percentile speed is greater than 10 km/h over the speed limit	
1b.	High Speed	0 to 5	<input type="checkbox"/> 5 points if the minimum of the 5% of daily traffic exceeds posted speed by 20km/h	
2.	Volume	0 to 20	<input type="checkbox"/> Local Road: 5 points for every 500 ADT <input type="checkbox"/> Township Connector Road: 5 points for every 1,000 ADT	
3.	Short-Cutting Traffic	0 to 15	<input type="checkbox"/> 5 points - presence of 25%-35% short cutting traffic <input type="checkbox"/> 10 points – presence of 35.1% - 45% short cutting traffic <input type="checkbox"/> 15 points – presence of 45.1% short cutting traffic	
4.	Collisions	0 to 10	<input type="checkbox"/> 1 point for every collision/year over a 3-year period	
Road Characteristics				
5.	Sidewalks	0 to 10	<input type="checkbox"/> 10 points for no sidewalks with evidence of pedestrian activity <input type="checkbox"/> 5 points for sidewalks on only one side	
6.	Pedestrian Generator	0 to 15	<input type="checkbox"/> 5 points for each nearby pedestrian Generator	
Total				
Does the location meet the minimum requirements? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Local Road =Minimum 35 points / Township Connector Road =Minimum 52points				

Appendix D

Traffic Calming Flow Chart

