Traffic Calming Measures Guide
October 2020

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Introduction

Background

Speed management is a significant challenge for many communities in Canada. This is particularly true for small, rural communities where the main road through the community serves a dual role. Outside the community, the road provides high-speed travel over long distances; within the built-up area, however, the same road accommodates local access, pedestrians of all ages, on-street parking, bicycles, and the many other features unique to the character of a community. This convergence of road purposes presents both an enforcement challenge for the community and a potential safety concern for the public. Speed management is also a concern on connector roads with strip development, as well as within residential neighbourhoods. Neighbourhoods generally experience higher volumes of pedestrians, and therefore require more stringent consideration for the safety and well-being of the residents.

Addressing the issue through law enforcement alone often leads to temporary compliance at a significant cost. A more permanent way to reinforce the need to reduce speed is to change the look of the road by installing traffic calming measures that communicate to drivers that the function of the road is changing.

In the Township of Zorra there is a growing concern that traffic related issues including speeding, poor sight lines, short-cutting, and high volumes are becoming more common and are not being addressed in a systematic and streamlined manner. In response to this, the Township has decided to implement a comprehensive and consistent policy approach to formally address traffic related concerns from the public. This guide outlines the prerequisites, process, and criteria to consider when traffic calming concerns are voiced by residents within the Township.

Purpose

The purpose of this guide is to provide Township staff a systematic procedure for the initiation, investigation and implementation of traffic calming measures within residential neighbourhoods, on collector roads, and on local roads within the Township of Zorra (the guide does not apply to arterial roads because typically they are intended to serve higher traffic volumes and higher speeds, and typically correspond to County roads, under the jurisdiction of Oxford County).

This guide also ensures that there is a formal process defined by which all sites/traffic calming requests can be evaluated against the same screening and criteria.

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.

Traffic Calming

What is Traffic Calming?

Traffic calming is defined as the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour 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.

Objectives 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:

A) Increase the Safety of Neighbourhoods

Using physical measures to alter driver behaviour, traffic calming can improve safety on neighbourhood streets and rural communities. The resulting reduction in volume and speed will create a safer environment for all residents including cyclists, children, disabled persons, and seniors.

B) Improve the Livability of Neighbourhoods

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

C) Restore Streets to Their Intended Function

The intended function of a local road is to accommodate low to moderate volumes of traffic travelling at 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. The Township of Zorra's collector streets are intended to provide access to properties as well as to provide linkages between local roads and other collector and arterial roads, again at lower operating speeds.

D) Maintain Access Routes for Emergency Services, & Maintenance Services

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

E) Promote Public Participation & Community Support

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

Advantages & Disadvantages

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

Advantages:

a) Reduce motor vehicle speeds
b) Reduce traffic volume
c) Discourage through traffic
d) Improve overall road safety
e) Improve neighbourhood livability
f) Reduce conflicts between road users

Disadvantages:

a) Increase emergency vehicle response time
b) Reduce ease of access in and out of neighbourhoods

c) Result in expensive solutions (time and resources)
d) Divert traffic onto neighbouring roads
e) Increase maintenance time and costs (e.g. snow clearing, garbage pickup)
f) Results in the implementation of measures some consider visually unattractive and/or cause increased noise pollution

Traffic Calming Measures

As per the Institute of Transportation Engineers (ITE) *Traffic Calming: State of the Practice*, physical traffic calming measures are classified as either speed control measures or volume control measures.

Speed Control Measures

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

A) Within Existing Roads

- Speed humps (rounded raised areas placed across the roadway):
  - Not to be considered unless upon urban streets,
  - Not to be considered in winter months,
  - Could be considered used in school zones, or
  - Consider through trial periods only with community feedback.

B) New Road Designs

- Speed tables (flat-topped speed humps);
- Raised intersections (flat raised areas covering entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section);
- Traffic circles (raised island, placed in intersections, around which traffic circulates);
- Roundabouts (larger than traffic circles and typically have raised splitter islands to channel approaching traffic to the right and are used on higher volume streets);
- Chicanes (curb extensions that alternate from one side of the street to the other, forming S-shaped curves);
- Chokers (curb extensions at midblock locations that narrow a street);
- Realigned intersections (changes in alignment that convert T-intersections

- with straight approaches into curving streets that meet at right angles);
- Neckdowns (curb extensions at intersections that reduce roadway width curb to curb); and
- Centre island narrowing (placement of a raised island located along the centerline of a street that narrows the travel lanes at that location).

Volume Control Measures

Volume control measures are intended to reduce traffic volumes and include:

- Diagonal diverters (barriers placed diagonally across an intersection blocking through movement);
- Median barriers (raised islands located along the centerline of a street and continuing through an intersection so as to block through movement at a cross street); and
- Forced turn islands (raised islands that block certain movements on approaches to an intersection).

Non-Physical Measures

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

- Speed enforcement (police enforcement);
- Pavement marking legends (painted speed limits on the pavement surface to remind drivers of the speed limits);
- Transverse lane markings (transverse bars or chevron pavement markings on a travel lane);
- Lane narrowing and shoulder widening through pavement marking; and
- Dynamic speed displays (radar signs which indicate travel speeds).

Stop Signs

It is noted that while stop signs are often employed as a means of traffic calming, such is not recommended. As per the *Ontario Traffic Manual Book 5 Regulatory Signs,* stop signs should not be used to speed control. Unwarranted stop signs increase vehicular speeds between stop signs and encourage rolling stops (stop signs only affect speeds within approximately 40 metres of the stop sign). An excessive number of stop signs, particularly those that are not warranted, also breeds disrespect for stop control signs and other traffic control devices.

Considered Measures

In consideration of the Township objectives in implementing a Traffic Calming Policy and Guide, and recognizing a large extent of the Township's road system is within a rural environment, the following traffic calming measures have been considered:

- Enforcement
- Stop signs
- Community Safety Zones
- Dynamic speed signs
- Lane narrowing via pavement markings
- Chicanes
- Curb extensions
- Speed humps
- Speed tables
- Centre medias
- Traffic circles
- Maintenance and signage
- Awareness stripes
- Flexible delineators

A) <u>Enforcement</u>

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 behavior and is proven to be quite effective in reducing travel speeds (provided the enforcement measures are consistent).

Advantages:

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

Disadvantages:

- Does not provide for a continuous and consistent solution (i.e., not present for 24 hours per day and 7 days a week)

Estimated Cost:

- Varies

B) Stop Signs

While stop signs are often employed as a means of traffic calming, such is not recommended. As per the *Ontario Traffic Manual Book 5 Regulatory Signs*, stop signs should not be used for speed control. Unwarranted stop signs increase vehicular speeds between stop signs and encourage rolling stops (stop signs only affect speeds within approximately 40 metres of the stop sign). An excessive number of stop signs, particularly those that are not warranted, also breeds disrespect for stop control signs and other traffic control devices.

Advantages:

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

Disadvantages:

- Deficiencies must be identified
- On-going maintenance for trees/landscaping

Estimated Cost:

- $200 per sign
- Maintenance cost varies

C) Community Safety Zones

The purpose of a Community Safety Zone sign is to indicate to the motorist that they are within a zone where fines have been increased through a special designation under the Highway Traffic Act.

Community Safety Zones may include roadways near schools, day care centres, playgrounds, parks, hospitals, senior citizen residences and may also be used for collision-prone areas within a community.

Community Safety Zone signs inform drivers they are entering a zone that the community has designated as an area where the safety of its children/citizens is paramount. Traffic related offences committed within the zone are subject to increased fines (many set fines are doubled such as speeding and traffic signal related offences).

Advantages:

- Effective as a temporary speed reduction measure

Disadvantages:
- Relies on motorist to voluntarily comply
- Duration of effectiveness is limited

Estimated Cost:
- $200 includes sign and posts installation

D) Dynamic Speed Signs

Dynamic speed signs are portable or permanent radar activated signs that instantaneously display approaching speeds for individual vehicles. They can also be programmed to display appropriate messages (e.g. Please Slow Down). The signs can be solar powered to reduce environmental impact.

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
- Good public relations
- Effective as a temporary speed reduction measure

Disadvantages:
- Relies on motorist to voluntarily comply
- Duration of effectiveness is limited
- Not accurate on two-lane roads (too much traffic)

Estimated Cost:
- $5,000 - $10,000 per sign

E) 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 and should cause drivers to reduce their travel speed. Any remaining road width would be designated as shoulder.

Transverse markings could also be painted on the shoulders provided there is sufficient hard surface to allow for markings.

Advantages:
- Provides additional space for shoulders, which may be used for other road users (particularly in absence of sidewalks)
- Low cost

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

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

Estimated Cost:
- $1,000 to $2,000 per km of pavement marking

F) Chicanes

Chicanes have one or more alternating curb extensions that narrow a two-lane road to a one- lane road for a short distance. This results in zigzag pattern while travelling down the street. Chicanes require drivers to slow down to drive around them.

Advantages:
- Increases motorist awareness
- Reduces straight line of sight
- Reduces motorist speeds

Disadvantages:
- Removes on-street parking
- Inattentive drivers may not abide by new centerline potentially impacting on-coming traffic
- Disrupts service/delivery vehicles to find parking

Estimated Cost:
- $10,000 to $20,000 for a set of 3

G) Curb Extensions

Also known as “bump- outs”, curb extensions are horizontal extensions of a curb into a road, resulting in a narrower road section. These may be used to provide high visibility of pedestrians, shorter walking distances to cross the road, and to slow motorists down.

Advantages:
- Interrupts straight line curbs and slows traffic
- Reduces turning radii to slow turning speed
- Improves pedestrian safety
- No impacts to emergency services

Disadvantages:

- Possible maintenance and drainage issues
- Reduces on-street parking
- Large vehicles may need to cross centerline to negotiate turns
- May Interrupt bike lanes

Estimated Cost:

- $5,000 to $20,000 each

H) Speed Humps

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 residential streets and connector roads.

Advantages:

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

Disadvantages:

- May delay emergency vehicles
- May divert traffic to alternate routes
- Possible noise from braking/acceleration
- May cause discomfort to drivers with disabilities
- Potential impacts to snowplows and trucks

Estimated Cost:

- $2,000 to $3,000 each
- $7,000 for a modular (removable) speed hump

I) Speed Tables

Speed tables are flat-topped asphalt or 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. For an 85^{th} percentile speed of approximately 40 km/h,

the speed table should be 80 mm high and 6.5 metres long in the direction of travel (2 metre ramps at the ends and a 2.5 metre plateau which is typically long enough to accommodate the entire wheelbase of a passenger car).

Advantages:
- Relatively cost-efficient
- Easy to construct
- Deters cut-through traffic
- Reduces vehicle speed
- Lesser impact to larger vehicles as compared to speed humps

Disadvantages:
- May delay emergency vehicles response times
- Traffic may divert traffic to alternate routes
- Possible noise created by braking/acceleration
- May cause discomfort to drivers with disabilities
- Potential impacts to snowplows and trucks

Estimated Cost:
- $3,000 to $5,000 each
- $10,000 for a modular (removable) speed hump

J) 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 cut-through traffic

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

Estimated Cost:
- $4,000 for 2.0 x 5.0 median with no landscaping

K) Traffic Circles

Circular island about 3 to 6 metres in diameter, placed at intersections of residential streets, around which traffic circulates in a counter- clockwise direction.

Advantages:
- Reduces speeds through intersections
- Provides visual breaks
- Reduces collisions
- Provides landscaping opportunities

Disadvantages:
- Increased maintenance cost if landscaped
- Possible removal of on-street parking
- Learning curve for drivers when first installed
- Increased time for winter maintenance

Estimated Cost:
- $8,000 to $25,000 each

L) Maintenance and 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.

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

Disadvantages:
- Deficiencies must be identified
- On-going maintenance for trees/landscaping

Estimated Cost:
- Maintenance cost varies
- $500 per sign

M) Flexible Delineators

Flexible delineators are guidance devices that provide protection and visibility in multiple settings. They can be used for delineating roads or redirecting pedestrians and motorists.

Flexible delineator posts lessen the possibility of serious traffic accidents as it can be installed at critical points along the roadway, such as on and off ramps, winding curves, near high-volume intersections, and can help motorists identify hazards right away.

Advantages:
- Inexpensive
- Easy to install
- No impact to emergency services

Disadvantages:
- Interference with wide loads and large agricultural equipment
- Must be removed for winter months
- High incidence of vandalism and vehicle damage
- High maintenance costs

Estimated Cost:
- $350 each

Traffic Calming Measures Guidelines

Consideration for Traffic Calming

Traffic calming measures will:

- Be considered when there is a demonstrated safety, speed or short-cutting traffic concern and acceptable alternative measures have been exhausted.

- 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 land 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 and Transit 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 to residents should be balanced with the equally important functions of traffic, emergency vehicle access, transit, bicycle, and pedestrian movement.

- Only be installed after staff has investigated existing traffic conditions and the necessary approvals have been received.

- Be monitored; follow-up studies will be completed to assess effectiveness and the results will be communicated to the community and Council.

Community Involvement

Restoring neighbourhood streets to their intended function and improving overall livability are primary objectives of traffic calming. 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 presented to Council for approval.

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.

Class Environmental Assessment Process

Traffic calming is exempt from the Ontario Environmental Assessment Act and is not an undertaking subject to the *Municipal Engineers Association Municipal Class Environmental Assessment* (October 2000, as amended in 2007). Where appropriate, public consultation elements of the Municipal Class EA for a Schedule B project have been incorporated in this Guide as a best practice.

It should be noted that the retirement of existing laneways, roads and road related facilities is classified as a Schedule A+ project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007). 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.

Traffic Calming Staff Review Considerations

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

Step 1: Initiate Traffic Calming Request

Step 2: Neighbourhood Support Form

Step 3: Data Collection

Step 4: Data Assessment

Step 5: Design Consideration and Community Feedback

Step 6: Finalize and Implement the Traffic Calming Plan

Step 7: Feedback Monitoring and Evaluation

Please see Appendix F for a flow chart depicting the traffic calming request process.

Step 1: Initiate Traffic Calming Request

Resident Concern

Residents with traffic related concerns are instructed to submit a Traffic Calming Request application (see Appendix C) to investigate traffic calming on their road or within their neighbourhood to the Township of Zorra. The Director of Public Works will contact the Proponent within 10 business days, acknowledging receipt of the application, as well as the estimated schedule for the initial screening/ review. Staff will then conduct a brief preliminary assessment to determine if the road meets the initial screening criteria

Initial Screening by Township Staff

Initial screening criteria to determine eligibility for consideration for traffic calming measures have been established. The Director of Public Works shall conduct the initial screening when a Traffic Calming Request application is submitted. 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 Zorra; and have a minimum length of 150 metres.

In addition, the following must also be satisfied:

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

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

Staff may be required to conduct a field survey or attend a meeting at the location with the Proponent. Should the Director determine that appropriate action can be taken that is in the best interests of public safety and budget, such action should be taken.

Response to Residents

Following this initial review, the Township will inform the Proponent as to whether their location met the initial screening criteria. Residents with requests that meet the initial screening criteria and meet Ontario Traffic Manual Book 5 thresholds/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.

If the location meets the above-noted initial screening criteria, staff may consider front-line mitigating measures to address the neighbourhood traffic concerns. These methods

could include tools such as the use of driver feedback boards, targeted police enforcement, sign installation, and pavement marking modifications.

Step 2: Neighbourhood Support Form

If Township staff cannot directly accommodate the traffic calming measure request, the Proponent shall be required to complete a **Neighbourhood Support Form** (NSF) (see Appendix D) Township staff will provide a sample copy of the NSF to the proponent. The focus of the NSF is to determine whether there is sufficient neighbourhood/local support for the Township to initiate an investigation into the need for traffic calming on the requested road.

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

Step 3: Data Collection

If the requested location meets the initial screening criteria and a petition results indicating that there is at least 51% 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 (or outsource such studies) to quantify and qualify the submitted traffic concerns. The data collected may include traffic volumes and composition (cars and trucks), vehicle speeds, collisions, sight lines related to deficient horizontal and/or vertical alignment and stopping distance, pedestrian activity, an origin/destination study if the request relates to shortcutting traffic, and historical site-specific information.

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

Table 1: 85th Percentile Speed Considerations

Posted Speed Limit	85th Percentile Speed
40 km/h	50 km/h
50 km/h	61 km/h
60 km/h	72 km/h
70 km/h	83 km/h
80 km/h	94 km/h

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

Table 2: Stopping Sight Distance Considerations

Design Speed	Minimum Sight Distance
40 km/h	45 m
50 km/h	65 m
60 km/h	85 m
70 km/h	110 m
80 km/h	130 m

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

Step 4: Data Assessment

Basis for Assessment

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

current conditions. A basis for assessment has been prepared in consideration of comparable traffic calming policies in effect throughout the area. The basis for assessment is known as the Assessment of Traffic Calming Needs Form (refer to Appendix E), which shall be completed by the Director of Public Works. All traffic calming measures, and consideration thereof, must meet *Ontario Traffic Manual Book 5* thresholds and criteria. Depending on funding availability, locations will be selected based on the point system with those locations with the highest points implemented first. If funding does not permit all locations to be implemented in one year, roads will be carried forward to the next year when they will then be re-prioritized to include any new locations.

Assessment Thresholds

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

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

Response to Residents

Should a location fail to meet these requirements, residents will be notified in writing and the investigation for traffic calming measures will discontinue.

Step 5: Design Consideration & Community Feedback

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 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.

Agency Consultation

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

Community Consultation

Township staff will implement the Township's Public Engagement **Strategy 3** (as outlined in the Township of Zorra Public Engagement Policy) to present the purpose, objectives, and implementation process of traffic calming in general. Strategy 3 will include public notification and possible information sessions for the public and external agencies to attend. The purpose of Strategy 3 is to notify the neighbourhood, and affected agencies, of the proposed traffic calming measure. This will include presenting and explaining the rationale behind the specific preferred traffic calming design. Strategy 3 implementation 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. The purpose of **Strategy 3** is to collaborate and to:

> *"Obtain public feedback on analysis, alternatives and/or decision. To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered. To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution. Seeks to engage, involve or collaborate with the community and key stakeholders."*

Notification will be published on the Township of Zorra's social media pages and official website. Staff may determine alternative notification methods at their discretion. 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.

Step 6: Finalize & Implement the Traffic Calming Plan

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.

Council Notification

A report recommending the implementation of the preferred traffic calming measure will be submitted to Township Council if it is determined by Township staff that the traffic calming measure may be contentious. The recommendation will be accompanied by an amending By-law for the inclusion of traffic calming measures, as required.

Implementation

Following Strategy 3 implementation, resident notification, and sufficient funding, traffic calming measures will be implemented. Where feasible, staff may decide it is beneficial to phase in the traffic calming 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.

Step 7: Feedback Monitoring & Evaluation

Monitoring & Evaluation

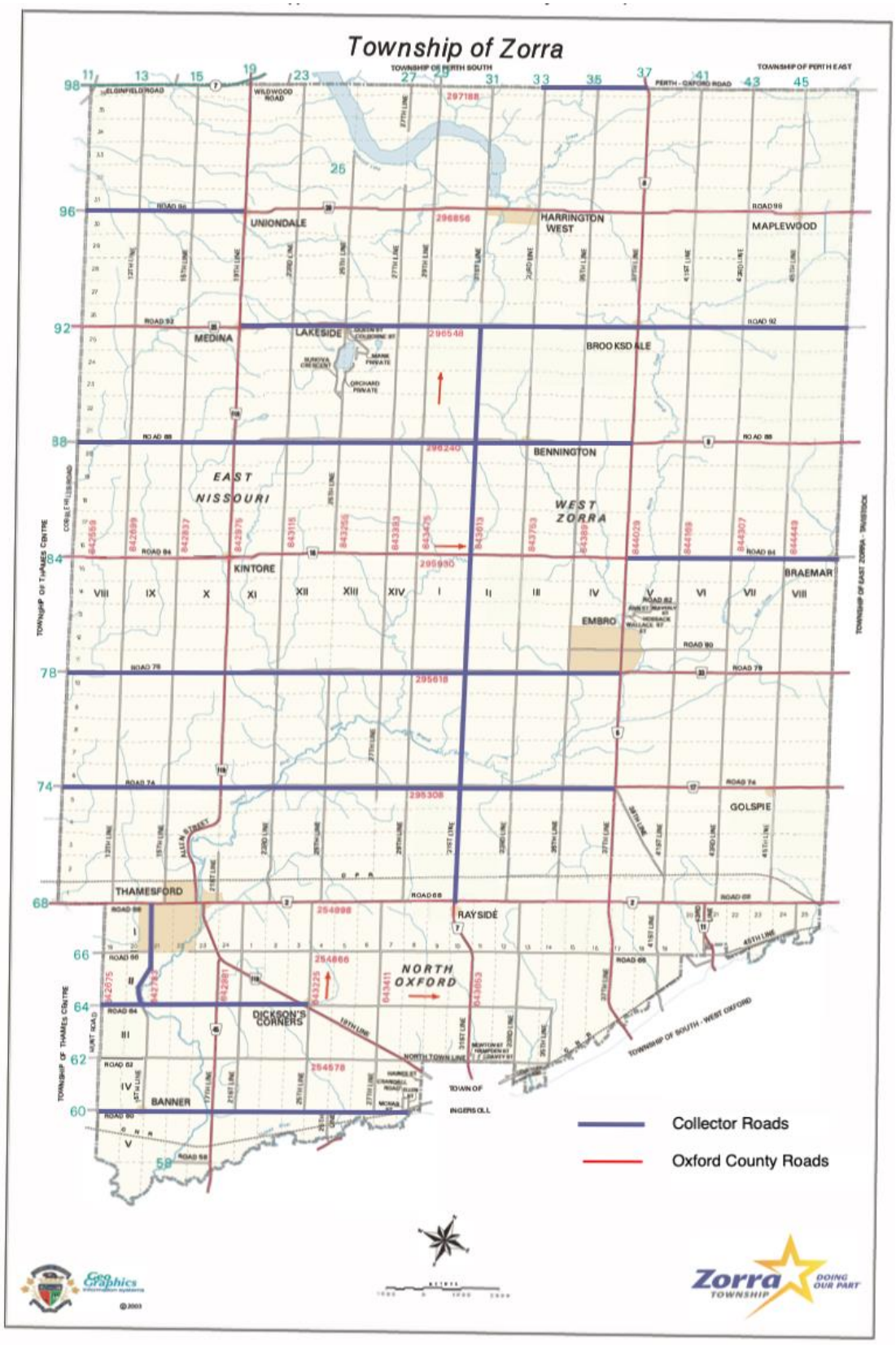
Township staff will seek feedback and monitor the road to determine the effectiveness of the utilized measures and their impact on the surrounding road network.

Removal of Traffic Calming Measures

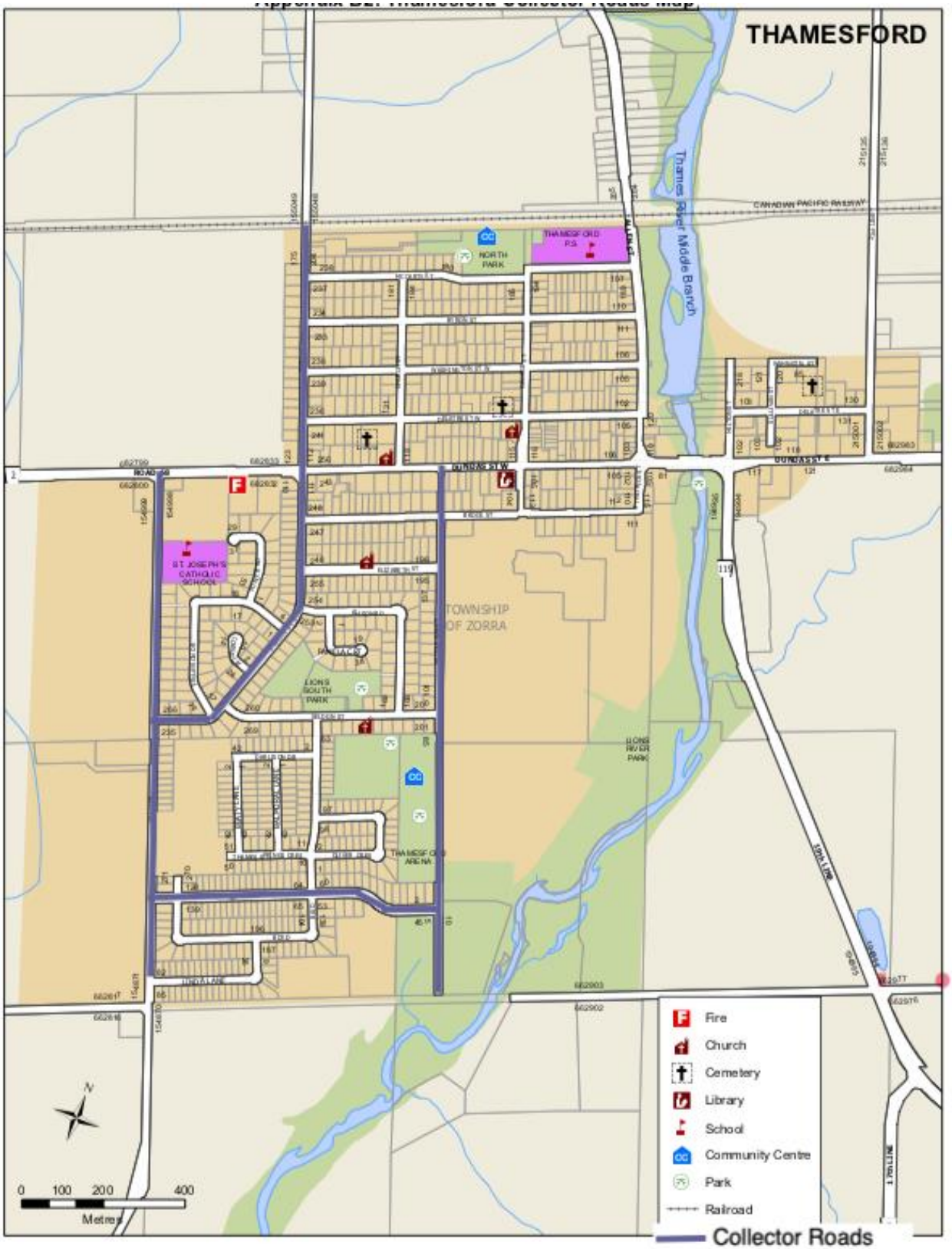
Traffic calming devices may be removed, at the request of residents provided that at least the same level of support exists to remove as was measured for installation. Traffic calming measures must be installed for at least a 1-year trial before starting the process to remove them. If traffic calming devices are removed, the subject street must wait at least 2 years before requesting a new Traffic Calming Measure; at this point the approval process will start over.

If a request to remove a single traffic calming device, within an overall Traffic Calming Measure, is received, all traffic calming devices will be considered for removal. Depending on circumstances, it could be possible to remove a single device constructed as part of an overall plan, however, in most cases all devices work together to be effective and to ensure that traffic is not diverted where it should not be. The Township reserves the right to remove traffic calming measures if it determines that they are ineffective or unsafe, or if they have created a negative impact that cannot be corrected. The Township will mail out a notification and advertise on the Township’s website and social media pages informing of its decision to remove traffic calming measures.

Appendix B1: Zorra Collector and County Roads Map



Appendix B2: Thamesford Collector Roads Map



Appendix B3: Embro Collector Roads Map

Appendix C: Traffic Calming Request From

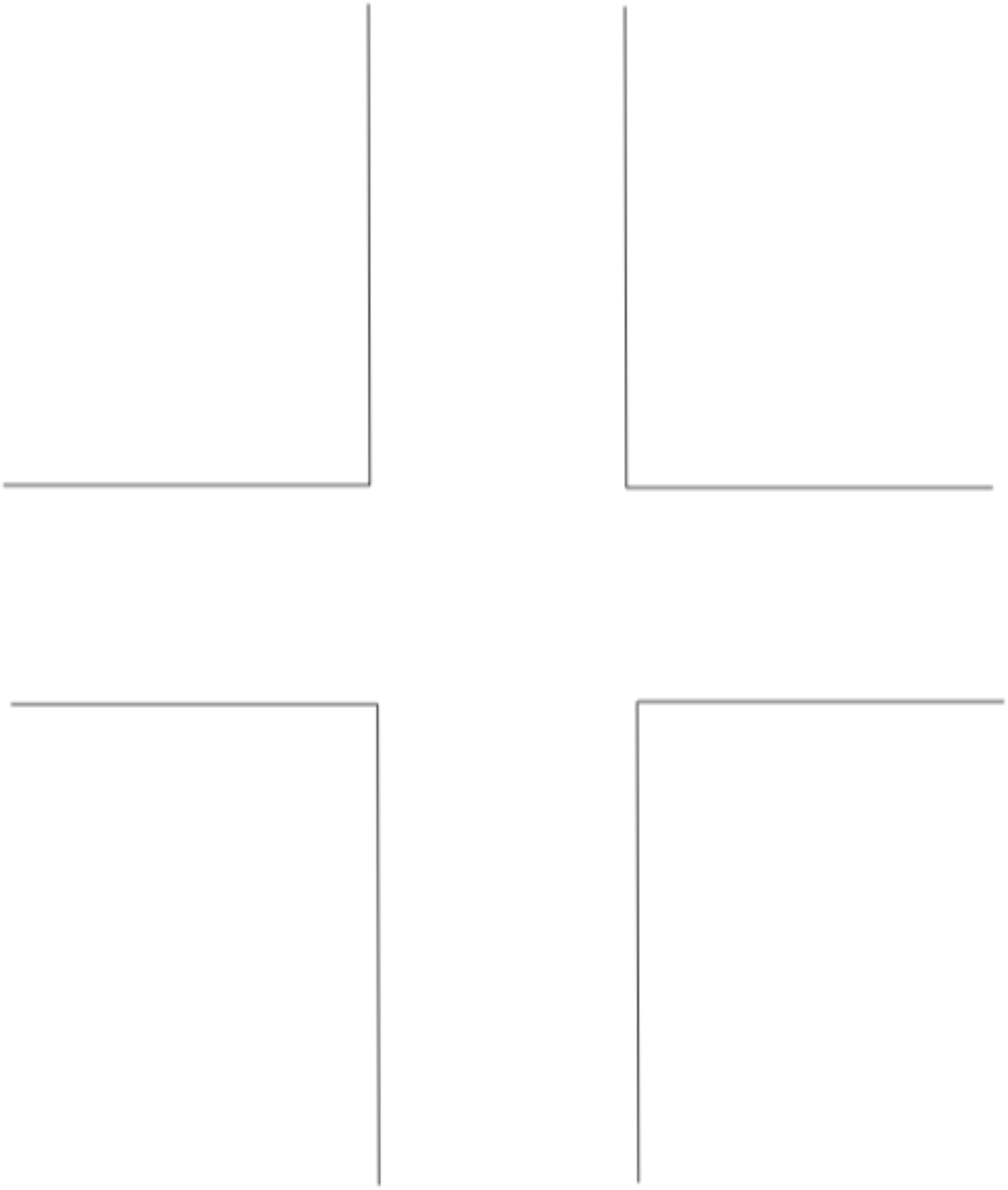
TRAFFIC CALMING MEASURE REQUEST FORM

Application Date:	
Requesting traffic calming measure: ☐ **implementation** ☐ **removal**	
Description of Location: *Provide sketch on reverse.*	
REQUESTED BY	
Name:	
Address:	
Contact phone:	**Email:**

OFFICE USE ONLY	
Staff Review:	**Date:**
Approved/ Bylaw:	

Please email this form to soliver@zorra.ca or mail/drop off the form to the Township of Zorra.
PO Box 306
274620 27th Line, RR3,
Ingersoll, ON
N5C 3J6

SKETCH



Appendix D: Neighbourhood Support Form

Neighbourhood Support Form for Traffic Calming Measures

What is traffic calming? The purpose of traffic calming is to reduce the negative effects of motor vehicle use, alter driver behaviour and improve conditions for non-motorized street users. 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 Springwater Traffic Calming Guide, or contact the Township Office.

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

Street:_____

From: _____ To: _____

Description of concerns and request for traffic calming:

_____

_____

_____

_____

_____

_____

_____

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

Township of Zorra
274620 27th Line, RR 3
N5C 3J6

OR soliver@zorra.ca

Please note that incomplete Neighbourhood Support Forms will NOT be accepted.

BY SIGNING BELOW, YOU ARE ACKNOWLEDGING THAT YOU HAVE READ AND AGREED WITH THE REQUEST AS OUTLINED ON THE PREVIOUS PAGE.

Only ONE (1) member per household may sign the Neighbourhood Support Form.

Neighbourhood Support Form for Traffic Calming Measures

Name	Address	Phone Number	Signature

Petition Organizer Contact Information	
Name:	
Phone:	
Email:	
Address:	

Appendix E: Assessment of Traffic Calming Needs Form

ASSESSMENT OF TRAFFIC CALMING NEEDS

Road section:	**Prepared by:**
Road class:	**Prepared on:**

TRAFFIC DATA			
Feature	**Range**	**Criteria**	**Score**
1. Speed	0 to 35	5 points for every 2km/h that the 85th percentile speed is greater than 15km/h over the posted speed limit	
2. Volume	0 to 20	Local Roadways: 5 points for every 500 ADT Collector Roadways: 5 points for every 1000 ADT	
3. Short-cutting Traffic	0 to 15	5 points if there is a presence of 25% or more shortcutting traffic, additional 5 points for every 10% increment above 25%	
4. Collision	1 to 10	1 point for every collision/year over a 3-year period	
ROAD CHARACTERISTICS			
Feature	**Range**	**Criteria**	**Score**
1. Sidewalks	0 to 5	5 points for no sidewalks with evidence of pedestrian activity	
2. Pedestrian Generators	0 to 15	5 points for each nearby (must have direct connection to subject roadway) pedestrian generator such as a school, playground, community centre, library, retail centre, etc.	
3. Sight Lines	0 to 10	0 points for excellent sight lines 5 points for impaired sights lines 10 points for very poor sight lines	
OVERALL CHARACTERISTICS			
Does the location meet the minimum requirement:			
Total score:			
*Minimum **35 points** needed for Local Roads*		*Minimum **52 points** needed for Collector Roads*	

Appendix F: Traffic Calming Request Process