City of Sarnia

Traffic Calming Guidelines

2018

City of Sarnia- Traffic Calming Guidelines

Executive Summary

The City receives concerns on a regular basis from residents regarding speeding, excessive traffic volumes, and general traffic safety. The Police do not have the resources to patrol all roads at all times so residents are looking for other solutions to address their concerns. Traffic Calming is the term used for measures that attempt to limit speed and traffic volumes to an appropriate level.

Drivers will take the shortest convenient route available and will drive at the speed that they feel comfortable at based on the road design. Many roads in the City are excessively wide and some street networks encourage cut through traffic. The City has a Complete Streets Guideline so new streets and reconstructed streets will be designed to encourage appropriate speeds and accommodate other modes of transportation. If a street isn't planned for reconstruction in the near future there may be a need to implement traffic calming measures to address the concerns. This guideline outlines how residents can initiate the traffic calming process and identify the criteria that needs to be met for a street or neighbourhood to be eligible for consideration. This guideline is based on similar examples from other municipalities, including London, Milton, and the Transportation Association of Canada – Canadian Guide to Traffic Calming.

Streets that Qualify for Traffic Calming

Traffic calming will only be considered on local and collector streets in residential neighbourhoods. Local roads carry up to 1,500 vehicles per day and are intended to provide access to residential properties. Collector roads carry up to 5,000 vehicles per day and help traffic move through a local neighbourhood.

What is Traffic Calming?

Traffic calming is the implementation of measures to reduce speeds and traffic volumes on local and collector roads to improve the safety for all modes of transportation. The goal is to restore roads to their original intended purpose of providing access to local residential properties not to act as cut through routes or high speed roads. It improves the liveability of neighbourhoods and improves the condition for other modes of transportation.

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What is NOT Traffic Calming?

A common request from residents when speeding or high traffic volumes are encountered is for all way stop controlled intersections, lower speed limits, and children at play signage. There are many studies that have determined that these measures have little to no impact on addressing the original concerns and may even make the situation worse:

Unwarranted All Way Stop

- Creates higher traffic speeds between stop signs. Studies have determined the speed is only reduced for 100m on either side of the intersection.
- Results in poor compliance with stop signs due to driver frustration
- Should generally only be used when the standard provincial warrant criteria are met

40 km/hr Speed Zone

- People travel at a speed they feel comfortable based on the environment which they are driving, regardless of the posted speed limit.
- Changing speed limit signs usually has limited impacts
- Collisions, when they occur, can be more significant due to the differences in speed between vehicles.

Children at Play Sign

- Many signs in residential areas, which are installed to warn people of normal conditions, fail to improve safety.
- Warning signs can be effective tools if used sparingly and only to warn motorists of uncommon hazards that are not apparent.
- Children at Play signs can give parents a false sense of security since motorists often disregard these signs.
- Children playing in the streets, while common place, is dangerous and prohibited in the Highway Traffic Act.
- Since children live on nearly every residential block, Children at Play signs would need to be placed on every road.

Advantages and Disadvantages of Traffic Calming

Traffic calming can be a very contentious issue for a neighbourhood. If used properly it can address identified operational traffic issues. However, it will

also introduce some disadvantages to a residential neighbourhood that will impact area residents after the project is complete.

Potential Advantages

- Reduce vehicle speeds
- Reduce traffic volumes
- Reduce number of cut through vehicles
- Improve neighbourhood safety especially for pedestrians and cyclists
- Reduce conflicts between road users
- Increase compliance with regulatory signs

Potential Disadvantages

- Increase in emergency vehicle response time
- More difficult to get into and out of your neighbourhood every day
- Cost
- May shift or divert traffic onto neighbouring roads
- Increase maintenance time and cost
- Add visually unattractive warning signs to a residential area
- May splinter neighbourhood with strong for and against traffic calming opinions

Guidelines

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

Traffic calming measures will:

- Be considered only after education, enforcement and traffic engineering efforts have failed to produce the desired results.
- Be considered when there is a demonstrated safety, speed or short-cutting traffic concern and acceptable alternative measures have been exhausted.
- 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) and a posted speed limit no greater than 50 km/hr.
- 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 City roads.
- Consider parking removal on a project-by-project basis. Parking needs of residents should be balanced with the equally important functions of traffic, emergency vehicle access, transit, bicycle, and pedestrian movement.
- Only be installed after engineering staff has investigated existing traffic conditions and the necessary approvals have been received.
- Be monitored; follow-up studies will be completed to assess the impact.

Traffic Calming Process

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

1. Traffic calming request
2. Preliminary assessment
3. Neighbourhood petition
4. Data collection
5. Traffic Calming Assessment Score
6. Develop potential measures and cost estimates
7. Public meeting
8. Traffic calming vote
9. Design and implementation
10. Evaluation

Traffic Calming Request

Traffic calming will typically be driven by residents contacting the City to express concerns about traffic safety in their neighbourhood. Residents should submit a request in writing to the Engineering Department identifying

their concerns and requesting that traffic calming be investigated for their neighbourhood.

Preliminary Assessment

If a request for traffic calming is received, City Staff will then conduct a brief preliminary assessment to determine if the requested location meets the Initial Screening Criteria. The criteria limits requests to those that can potentially be addressed by standard traffic calming techniques. The following criteria must be met before proceeding:

- Be a local or collector road
- Have a minimum Average Daily Traffic (ADT) of 500 vehicles
- Speed limit shall not be greater than 50 km/hr
- All reasonable efforts have been made to address the concerns using other means including engineering, education, and enforcement
- Zoning should be primarily residential in nature
- Be a minimum of 150m in length

Following this initial review, the City will inform residents as to whether or not their location meets the initial screening criteria. Roads that do not meet the above-noted criteria may still be eligible for other mitigating measures and/or police enforcement initiatives.

Neighbourhood Petition

After it has been determined that the requested location meets the initial screening criteria, a petition will be provided to the original proponent. The proponent will be responsible for collecting signatures for the petition. The City will specify the area that must be included as part of the petition. The focus of the petition will be whether or not there is neighbourhood support for the City to initiate an investigation into the need for traffic calming on the requested road.

A minimum of 40% of property owners within the area must indicate their approval by signing the Traffic Calming Petition. The signatures must come from households directly on the section of road that has been identified as the location for the potential implementation of traffic calming measures, as defined by engineering staff. Each household is represented by one signature, regardless of the number of people in the household. This step in the process is crucial in determining the level of concern from the residents. Failure to meet the 40% support level will result in termination of the

investigation and the road will not be considered for traffic calming for one year.

Data Collection

Once a successful petition is received the collection of data is scheduled based on a priority list. The City will collect information and data required to qualify and quantify the extent of the local traffic problem. The data collection may include any of the following:

- Vehicle volume count
- Speed study
- Classification count to determine heavy vehicle traffic
- Collision data for the most recent three years
- Study to quantify cut-through traffic
- Existing road conditions (e.g. pavement condition, signing, marking)
- Pedestrian activity
- Presence of sidewalks on one or both sides of the road
- Presence of special pedestrian generators such as schools, seniors homes, playgrounds, etc. in the area
- History of traffic operations for the area within last five years

A review of the data will be completed using recognized engineering standards. Once collected and summarized, the data will be used in the point assessment system to determine the priority level.

Traffic Calming Assessment Score

The scoring system is a screening process that quantifies a road's potential need for traffic calming. Depending on funding and staff availability, locations will be prioritized based on the score. If funding or staff resources do not permit all locations to be completed in one year, roadways will be carried forward to the next year when they will then be re-prioritized to include any new locations.

The 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.

Should a location fail to meet these requirements, residents will be notified in writing and the investigation for traffic calming measures will discontinue. However, staff will continue to attempt to address the concerns of the residents by other means.

Table 1 - Traffic Calming Assessment Score

	Item	Range	Criteria	Score
1a	Speed	0-35	5 points for every 2km/hr that the 85th percentile speed is greater than 10km/hr over the speed limit	
1b	High Speed	0-5	5 points if minimum of 5% of daily traffic exceeds posted speed by 15-20km/hr	
2	Volume	0-20	Local Roadways: 5 points for every 1500 ADT Collector Roadways: 5 points for every 2000 ADT	
3	Short-Cutting	0-15	5 points if there is a presence of 25% of more short-cutting traffic, additional 5 points for every 10% increment above 25%	
4	Collisions	0-10	1 point for every 2 collisions/year over a 3 year period	
5	Sidewalks	0-10	10 points for no sidewalks with evidence pedestrian activity, 5 points for sidewalk on only one side	
6	Pedestrian/cyclist Generator	0-15	5 points for each nearby pedestrian/cyclist generator such as a school, playground, community centre, libraries, retail centres, etc.	
Total				
	Local Road = 35 point minimum			
	Collector Road = 52 point minimum			
			□ Yes	□ No

Develop Potential Measures and Cost Estimates

Various traffic calming tools will be considered based on what will work best in each local context to address the specific concerns. A sample list of potential measures is provided at the end of this document. The proposed traffic calming measures will be in accordance with the design guidelines outlined in the Canadian Guide to Neighbourhood Traffic Calming and the engineering judgement and experience of staff.

Public Meeting

Staff will host a public information meeting to present the purpose, objectives, and implementation process of traffic calming in general. Staff will then present and explain the rationale behind the proposed traffic calming measures for the neighbourhood. The public meeting will provide residents with an opportunity to become involved in the process, learn more about the proposed traffic calming treatments and to provide their feedback.

Traffic Calming Vote

The objective of the vote 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.

Define Survey Canvas Area

Using summarized comments from the submitted petition and preliminary information about the road and surrounding area, staff will define the survey canvas area. As part of this process, surrounding roads may be identified as part of the investigation. As a minimum, households with direct frontage onto the road to be investigated will be surveyed, in addition to each property whose side yard abuts the subject roadway section. Households that do not directly front the subject road, but who have no other option but to use the section of roadway where traffic calming is being proposed (e.g. in the case of a cul-de-sac), will not receive the survey.

Measuring Community Support

In order for the process to continue, a majority (51%) of total surveys delivered must be returned to the City indicating they approve the installation of the recommended traffic calming plan. This reinforces that community support is vital for the ultimate success of traffic calming.

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.

Design and Implementation

Using technical data, community feedback, and in keeping with the goals, objectives and principles set out in this guideline, staff will finalize the preferred traffic calming design and seek Council approval.

If, during the detailed design stage, limitations are identified which challenge the feasibility of the plan, alternatives will need to be considered. This may include alterations or a re-development of the preferred plan. If significant or major changes to the plan are required due to design constraints, agencies and residents on the mailing list will be consulted and notified of any changes. If staff believe that the required modifications to create the detailed design result in a significantly different final design from that which was presented to residents as part of the survey, staff may recommend additional agency consultation, another survey and/or public meeting.

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

Evaluation

Engineering staff will monitor the road to determine the effectiveness of the utilized measures and their impact on the surrounding road network. This information will be used in recommending similar measures in the future. In addition to conducting before and after speed studies the City will conduct studies to assess if the traffic calming plan has resulted in significant amounts of traffic diverting to adjacent, parallel streets in some cases. These after studies will be compared with the City's 'before' studies to determine the change in traffic volume.

Removal of Traffic Calming Measures

Traffic calming devices may be removed, at the request of residents after two years provided that at least the same level of support exists to remove as was measured for installation.

A minimum of 40% of property owners within the impact area must indicate their approval by signing the Traffic Calming Removal Request. The signatures must come from households with direct frontage or flankage onto the section of roadway where traffic calming has been installed. Each household is represented by one signature, regardless of the number of people in the household.

When staff receives a successful petition, a survey will be sent out to all the area residents who were initially surveyed. The survey will be delivered to the same residents as was initially done to gauge support for traffic calming. The survey must indicate the majority (51%) of respondents surveyed agreeing to the removal to be deemed successful. Traffic calming measures must be installed for at least two years before starting the process to remove them. If traffic calming devices are removed, the subject street must wait at least five years before requesting a new traffic calming plan; at this point the approval process will start over.

If a request to remove a single traffic calming device, within an overall traffic calming plan, is received, all traffic calming devices will be considered for removal. Depending on circumstances, it could be possible to remove a single device constructed as part of an overall plan, however, in most cases all devices work together to be effective and to ensure that traffic is not diverted where it should not be. The City reserves the right to remove traffic calming measures if it determines that they are ineffective or unsafe, or if they have created a negative impact that cannot be corrected. The City will provide notice of its decision to remove traffic calming measures.

Traffic Calming Measures

There are variety of potential traffic calming measures, each have their own advantages and disadvantages and are useful for specific goals. The issue that is intended to be resolved will dictate which measures will be recommended for implementation. A brief list of potential options is

provided below, more details can be found by researching online (i.e. Traffic Calming Guide for Toronto) or through discussion with City Staff.

- Curb Extension
- Curb radius reduction
- Directional closure
- Diverter
- Full closure
- Intersection channelization
- On-street parking
- Raised crosswalk
- Raised intersection
- Raised median island
- Sidewalk extension
- Speed hump
- Textured crosswalk
- Roundabout