Traffic Calming Policy

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1. Policy Statement

Traffic calming is a collection of measures intended to improve conditions for users, including non-motorized road users of all ages and abilities, while travelling within LaSalle. Traffic calming measures include engineering, design, educational and enforcement measures that can be used individually or collectively as a toolkit to aid in addressing traffic challenges such as high speeding and shortcutting traffic. Depending on the traffic concerns, the calming measures can be either passive behaviour changes or permanent physical infrastructure modifications.

1.1 Scope

The purpose of this policy is to provide framework for initiating, developing, assessing, implementing and monitoring traffic calming measures for local and minor collector roads in the Town of LaSalle. The purpose of traffic calming is to address concerns about the behaviour of motor vehicle drivers and develop measures to mitigate the concerns resulting in safer roads for all modes of transportation. Updating the policy allows the Town Staff, members of Council and the public to agree on an approach and criteria that can be used objectively to respond to and prioritize requests.

1.2 Definitions

Annual Average Daily Traffic (AADT) shall mean the total volume of vehicle traffic of a highway or road for a year divided by 365 days.

Institute of Transportation Engineers (ITE) shall mean the international membership association of transportation professionals who work to improve mobility and safety for all transportation system users and help build smart livable communities,

Local Road shall mean a road that provides access to property, has less than 1,000 vehicles per day, has low traffic speed and generally is not a bus route.

Major Collector Road shall mean a road that provides access to other collector and arterial roadways. Major collector roads have a traffic volume of over 3,000 vehicles per day, intersect with other major collector roads and arterial roads and often extend from one end of Town to the other.

Minor Collector Road shall mean a road that provides access to property, major collector roadways and some arterial roadways. Minor collector roads have a traffic volume of 1,000 to 3,000 vehicles per day and are relatively shored in comparison to major collector roadways.

Public Information Centre Meeting (PIC) shall mean an open meeting to which all members of the public are invited.

Transportation Association Canada (TAC) shall mean the not-for-profit, national technical association that

Traffic Calming shall mean the use of physical design and other measures to improve safety for motorists, pedestrians and cyclists.

1.3 **Policy**

The ultimate goal of traffic calming is to address the negative effects of motor vehicle use and driver behaviour. Most traffic calming measures address speeding, reckless driving, and conflicts between road users. The objective of implementing a traffic calming policy is to determine the best combination of measures that result in the greatest improvement in the quality of life and community safety at a reasonable cost.

2. Street Classification

The Town of LaSalle's Official Plan includes three road classifications: local, collector and arterial roads. A road's classification is an indication of its purpose and also the range of traffic volumes it can be expected to carry. The primary function and the purpose of the road should be maintained when considering the implementation of various traffic calming measures. Many traffic calming policies in the past have excluded arterial roads and restricted collector roads to only certain types of measures. However, with the 2018 update to the Transportation Association of Canada (TAC)/Institute of Transportation Engineers (ITE) manual, there are now traffic calming measures that are considered suitable for arterial roads.

Local and collector roads are intended to provide access to properties or to connect local roads to arterial roads. These roads typically have lower volume and speed. Arterial roads are designed to efficiently move and distribute traffic across the network,

including goods movement and emergency vehicles, and any traffic calming measures that interfere with this function would not be recommended. For these reasons, it is important to carefully apply the right traffic calming measures to address the specific problem, based on the road classification.

2.1 Best Practices and Comparable Policies

Relevant best practices and comparable policies to the existing warrant from several other comparable municipalities in Ontario were considered. The review of four municipalities, the Town of Milton, the City of Windsor, City of London, and the Municipality of Leamington, is summarized in Table 1 as they were the most relevant to the Town of LaSalle. In developing the policy for LaSalle, specific components of other municipal traffic calming policies were referenced.

Table 1: Comparable traffic calming policies of neighbouring municipalities

Criteria	Milton	Windsor	London	Leamington
Population	158,249	342,000	519,000	30,019
Policy Document	Traffic Calming Policy	Permanent Traffic Calming Procedure	Traffic Calming Practices and Procedures for Existing Neighbourhoods	Traffic Calming Policy
Year of Release	2023	2021	2019	2023
Eligible Street	Local or collector roads within primarily residential neighbourhoods.	Local or collector roadway in the City's Official Plan.	Local, Primary and Secondary collector roads within residential areas.	
Traffic Calming Measures Scope	- Vertical deflections - Horizontal deflections - Obstructions - Signage	- Vertical deflections - Horizontal deflections - Volume control - Non-Physical	- Vertical deflections - Horizontal deflections - Obstructions - Passive and mitigation measures	- Vertical deflections - Horizontal deflections - Obstructions - Signage
Process Initiation	Residents with traffic related concerns submit a request online to investigate traffic calming within their neighbourhood to the Town	Residents with traffic related concerns submit a request to the Transportation Planning Department.	Residents with traffic related concerns are instructed to submit their written request to investigate traffic calming within their neighbourhood to the City.	Residents must submit a request in writing to the Municipality, accompanied by a petition, to investigate traffic calming in their neighbourhood or on a specific roadway.

Criteria	Milton	Windsor	London	Leamington
			Staff will then conduct a brief preliminary assessment to determine if the requested roadway meets the Initial Screening Criteria. A Signed petition with a minimum of 25% support for traffic calming measures must be submitted to the City before an area is considered for traffic Calming.	The petition results must demonstrate that a minimum of 25% of the dwelling units with direct frontage onto the candidate roadway or section support the implementation of traffic calming measures.
Initial Screening Criteria	- Must have minimum of 500 Annual Average Daily Traffic. - Posted speed limit shall not be greater than 50 km/h. - All reasonable efforts have been made to address concerns including engineering, education and enforcement tools.	- Street length must be at least 150m. - Street has not been evaluated for traffic calming in the last 5 years.	- Must have a minimum of 500 Annual Average Daily Traffic. - Posted speed limit must be 50km/h or lower. - The road is primarily residential land use - The street must provide an obvious bypass to a major intersection - The road length must be longer than 300m - No previous efforts must have been made within the last 36 months.	- Posted Speed: Urban Road - Is the posted speed 50km/h or lower Rural Road: Is the posted speed 60km/h or lower - Must have a minimum of 100 Annual Average Daily Traffic. - Street length must be at least 120m. - The vertical grade must be less than 6% - No previous efforts must have been made within the last 24 months
Initial Public Support	A PIC meeting is held to present the purpose, objectives and implementation process of traffic calming. The Town presents and explains the rationale behind the specific preferred traffic calming design.	If initial screening is met, a letter is mailed to residents within the survey area. A minimum 25% must respond, in favour of a traffic calming review.	Signatures and addresses of at least 10 separate households on the street of concern.	Prior to initial screening, a minimum of 25% support in favour of traffic calming must be received.
Scoring or Ranking Description	Point Assessment System: Locations with high point assessment will be given priority based on quantitative	Point based system - A project should score at least 30 points.	Point based system Minimum points to qualify: - Local Roads: 35 points - Collector Roads: 52 points	Point Assessment System: Locations with high point assessment will be given priority based on quantitative

Criteria	Milton	Windsor	London	Leamington
	nature of the point assessment system.			nature of the point assessment system.
Speed	5 points for every 2km/h that the 85th percentile speed is greater than 10km/h over the posted speed limit.	- Local Road: 3 points for every km/h (85th percentile) over the posted speed using the average along the street. - Collector Road: 2 points for every km/h (85th percentile) over the posted speed limit using the average along the street. (max. points = 30)	- 5 points for every 2km/h that 85th percentile speed is greater than 10km/h over the speed limit. (max. points = 35) - 5 points if a minimum of 5% of daily traffic exceeds posted speed by 15 – 20km/h (max. points = 5)	- Local Road: 2 points for every km/h (85th percentile) over the posted limit - Collector Road: 1 point for every km/h (85th percentile) over the posted speed limit (max. points = 25)
Volume	- Local roadways: 5 points for every 1,000 AADT. - Collector roadways: 5 points for every 2,000 AADT	- Local Road: 1 point for every 100 AADT starting from 0. - Collector Road: 1 point for every 100 AADT starting from 3,000 for Class II and 6,000 for class I. (max. points = 25)	- Local Road: 5 points for every 1,500 AADT - Collector Road: 5 points for every 2,000 AADT (max. points = 20) - 5 points if 25% or more short-cutting Traffic; and additional 5 points for every 10% increment above 25% (max. points = 15)	- Local Road: 1 point for every 100 AADT starting from 0. - Collector Road: 1 point for every 200 AADT starting from 0. (max. points = 25)
Collisions History	1 point for every 2 collisions/year over a 3 year period	- 1 point for each reducible collision per kilometer in the past five years plus 5 points for each reducible collision per kilometer involving a vulnerable road user within the past five years. (max. points = 10)	- 1 point for every two collisions/year in the last three years. (max. points = 10)	- 5 points for each preventable collision within the past three years. - 10 points for two or more preventable collisions within the past 3 years. 10 points for every preventable collision which resulted in personal injury within the past three years. (max. points = 25)
Pedestrian/	5 points for every nearby* pedestrian generator such as a	- Local and Collector Roads: 5 points for each	5 points for each nearby pedestrian generator (school,	- 5 points for each community generator (ie. Park, school,

Criteria	Milton	Windsor	London	Leamington
Cyclists Generators	school, playground, community centre, library, retail centre, etc. (*Nearby = must have direct connection to subject roadway)	generator (park, senior's centre, community centre, place of worship, retail or public institution excluding schools) with a direct connection to the street (frontage, trail, sidewalk or other access point). (max. points = 10) - 7.5 points for each school along the street and 5 points for designated school walk routes for schools near but not on the street itself. (max. points = 15)	playgrounds, community centres, libraries, retail cetnres, etc.) (max. points = 15)	recreation centre, senior's centre, community centre, place of worship) with a direct link to the roadway (frontage, trail, sidewalk, or other access point) - 10 points for a signed bicycle route (max. points = 25) - 7.5 points for each school located along the roadway. - 5 points for designated school walking routes that are along the roadway. (max. points = 15)
Sidewalks	- 10 points for no sidewalks with evidence of pedestrian activing - 5 points if sidewalks on only one side	- 5 points if the road does not have a continuous sidewalk on at least one side. (max. points = 5)	- 10 points if the road does not have any sidewalk with evidence of pedestrian activity. - 5 points for sidewalks on only one side (max. points = 10)	- Not Applicable
Opportunities for Community Participation	Yes – PIC Meeting and Community Support Survey	Yes – Public Survey and PIC Meeting	Yes – Surveys and PIC Meeting	Yes – Survey only
Additional Community Support Approval Process	Yes – Community Support Survey After initial screening criteria is met, a minimum of 51% of surveys must be returned and 60% acceptance is required From: the property owners with households with direct frontage or flankage onto the section affected roadway.	Yes – Optional second PIC Meeting. After PIC meeting, a second Public Survey is sent: a minimum of 50% must respond, and of this, 60% must indicate their support for the Traffic Calming Plan. From: the residents of the polling area.	Yes- PIC Meeting and Input Notices will be circulated to all residents who have direct frontage or flankage of the street in question. PIC Meeting is to present the proposed Traffic Calming Measures and gain input. A minimum of 51% of total surveys delivered must be returned to the City indicating	- Not Applicable

Criteria	Milton	Windsor	London	Leamington
			they approved the future installation of recommended traffic calming plan.	
Emergency/ Transit/ Maintenance Approval or Involvement	Yes	Yes	Yes	Yes
Alternative/ Flexible Measures, if Initial Screening Criteria is not Met	Yes – Staff will consider "front-line" mitigation measures such as driver feedback boards, Neighbourhood Speed Watch programs, police enforcement, sign installation and pavement marking modification.	Yes – If the request does not meet or fails the traffic calming warrant, residents will be directed to: Expedited Temporary Traffic Calming Procedure or Local Roadway Speed Humps Procedure	Yes – Staff will consider "front-line" mitigation measures such as driver feedback boards, police enforcement, sign installation and pavement marking modifications.	- Not Specified
Degree of Process Complexity	High	High	High	High
Monitoring and Evaluation Methods	- Outcome study: 4-6 months following implementation. - Town will take corrective actions if: through traffic on parallel streets has increased by 15% or more (with a minimum of 150 vehicles)	- Outcome reviews will be undertaken 6 – 12 months following installation of traffic calming measures to evaluate effectiveness. - City may run the site through the warrant process again to see if it still has a need for calming. - City may undertake further public meetings to discuss amendments to the project.	- Traffic engineering staff will monitor the roadway to determine the effectiveness of the utilized measures and their impact on the surrounding road network. - City will also assess if the plan has resulted in significant amounts of traffic diverting to adjacent, parallel streets.	- Municipal staff should monitor traffic calming measures to determine their effectiveness and impact on the surrounding road network. This information may be used for future recommendations to traffic calming treatments within the Municipality of Leamington.

2.2 TAC'S Canadian Guide to Traffic Calming 2018

TAC and ITE jointly updated the 1998 Canadian Guide to Neighbourhood Traffic Calming and have published the Canadian Guide to Traffic Calming 2018 (CGTC). A group of professionals and associates contributed to the update to the 1998 Guide based on their experience from many more municipalities' current best practices. The CGTC is intended to be used as a national guideline, and the review of the CGTC is to assist LaSalle in developing its own policy and use it as a reference to educate elected officials and the general public. LaSalle's policy conforms to the guiding principles and follows the process recommended in the CGTC and much of its content is good background to the subject.

The following sections summarize relevant contents from TAC's 2018 Guide to Traffic Calming that are considered when developing a traffic calming plan.

2.2.1 Overview

Traffic calming is used to maintain the road's intended function while keeping the safety of all road users at the forefront. Two main causes that may elicit the need for traffic calming to be considered are excessive speeding and traffic short-cutting/infiltration. Depending on the cause of the issue, the location, and the desired results, the proposed measures should reflect the objective. Some traffic calming measures are more effective at controlling speed, for example, others might be intended to deter traffic from using a particular street. There are various types of traffic calming measures but largely divided into physical measures that require alteration of physical attributes of the roadway and passive measures such as enforcement and educational/awareness programs.

Some traffic calming measures are more suitable in certain locations than others. In the past, traffic calming was designed and implemented primarily in residential neighbourhood areas as noted by the first edition of TAC/ITE's guide title of Canadian Guide to Neighbourhood Traffic Calming. The updated edition now takes into consideration not only local and collector roads but also arterial roads. This addition however includes provisions that the objective and the approach be different than local and collector roads to make sure that the function of arterial roads is not hindered. Restriction and diversion of traffic flow are not recommended on arterials roads. In addition, the area type (rural or urban) is an important factor to consider when choosing traffic calming measures.

One of the main objectives of traffic calming is to increase safety of the road users. Decreasing the operating speed of vehicles and volume of traffic and heightening the awareness of other street users can reduce conflicts between road users. However, traffic calming measures require appropriate signage and pavement marking to ensure all users know how to use the road safely.

2.2.2 Factors Affecting Traffic Calming Planning

There are many factors for municipalities to consider when planning and implementing traffic calming policies to ensure they are effective. The factors outlined in the CGTC are: legislation and regulations, liability, accessibility, enforcement, emergency services, maintenance operations, modes of transportation, and compatibility with municipal land use and transportation plans as shown in Table 2.

Table 2: Factors to consider when planning traffic calming policies

Factors	Considerations
Legislation and Regulations	Any planned traffic calming should not conflict with the current legislation and relevant by-laws in place, at all levels of government.
Liability	Developing a traffic calming policy is helpful to minimize potential liability for the installation and impact of traffic calming that may arise from perceived conflict with other reference documents. For the safety of all road users, a number of steps can be taken to minimize potential liability issues in the future; developing the policy and documenting the process which includes the design, implementing and maintenance of traffic calming measures. Support from the decision-makers would be easily made with a well thought-out process that considers all road users and affected Town Staff.
Accessibility	Traffic calming measures should consider road users of all ages and abilities that allow them to be independent and safe.
Enforcement	Understanding that enforcement resources are limited and that not all locations can be monitored at all times, consideration of various measures that are self-enforcing may have greater chances of success. However, these measures tend to include physical changes to the road characteristics, therefore good balance between different types of traffic calming measures is important.
Emergency Services	While slowing down daily vehicular traffic is the objective, this may have negative impacts on emergency services' response times. Over time, enhanced designs have been developed to minimize the impact on emergency service vehicles while still providing functionality to the general traffic. These design considerations are crucial when selecting traffic calming measures.
Maintenance and Operations	Consultation with the maintenance and operations staff of the municipality throughout the process is important to ensure the implementation of traffic calming measures do not conflict with their operations. Snow removal, pavement markings, damages due to roadway geometry changes are

Factors	Considerations
	common concerns however, there may be other locally specific issues that may arise.
Modes of Transportation	Active transportation and transit operations are important aspects to consider since the objective of traffic calming is to enhance safety of all road users. Careful consideration of the measures and thorough consultation process can improve the road user's experience.
Compatibility with Municipal Land Use and Transportation Plans	Incorporating traffic calming implementation throughout other long-range plans and policies confirms uniformity across the municipality and potentially within the region as well.

2.2.1 Guiding Principals

The guidelines indicated in Table 3 should be taken into consideration before and during the implementation process of a traffic calming intervention. These are general recommendations that recognize important aspects of the investigation and implementation process.

Table 3: Key guidelines to consider before, during and after implementing traffic calming

#	Guidelines
1	Identify the source of the problem and quantify the extent of the problem through data collection or analysis.
2	Consider first cost-effective options such as increased enforcement, education or community-led road watch programs, installation of driver speed feedback boards, and/or better street signage.
3	Consider widening the scope by studying an area-wide plan instead of a localized, street-specific plan that would likely result in displacement of traffic onto adjacent streets.
4	Generally, traffic calming measures that are effective at all hours of the day and do not require enforcement of officers are both preferred and supported.
5	Verify that the intervention does not impede upon the accessibility of non-motorized modes of transportation such as pedestrians, cyclists and wheelchairs.
6	Ensure that all service providing vehicles including transit, police, fire, ambulance, garbage collection, snow plowing and other emergency or service vehicles are able to handle the proposed infrastructure and calming measures.
7	Continue to monitor any traffic calming measures for six months or a year following implementation to analyze the effective and success or to prepare a contingency plan in case the measure does not produce ideal results.
8	Engage with all relevant stakeholders (community, emergency service staff, transit staff, traffic engineering, public works staff, Council, other organizations)

#	Guidelines
	in the investigation and implementation process to reflect the needs of municipal users and analyze the traffic calming measures through different lenses. This would maximize opportunities of consensus/participation and reduce the risk of other factors not being considered in time.

2.2.2 Traffic Calming Process and Procedure

CGTC includes a comprehensive process of potential steps to consider when developing a traffic calming plan. Understanding that each municipality has their own culture and concerns that they need to address, this process can be a model that municipalities can adapt to their needs. There are five main stages in the process: initiation, development, approval, implementation and evaluation.

2.2.2.1 Initiation

A consistent and documented process is important to keep track of all requests. This section has been expanded to include various types of initiation such as external public requests but also an internal checklist that may prompt a survey within an area. Initial criteria are recommended to use for the screening process. At the end of this stage, a problem definition, scope and decision to proceed or not should be made.

2.2.2.2 Development

More detailed project definition including data collection, stakeholders, list of alternative solutions are determined at this stage. Review and analysis of the problem statement to develop the plan for each of the project and finally determining a solution.

2.2.2.3 Approval

For any traffic calming plans to go forward, approval from stakeholders, residents and the decision-makers is essential. At this stage, an overview of the problem statement and proposed solutions are reviewed to ensure that the objective is met. The community support is important as the initial request might not reflect the opinion of the majority affected. There is potential for two stages of approval; one approval to agree on the need of traffic calming measures and second approval for the type of traffic calming measures to be implemented.

2.2.2.4 Implementation

This stage is to complete detailed design according to the specific study area and to ensure the funding is available and finally, to construct the designed traffic calming measure.

2.2.2.5 **Evaluation**

Monitoring and evaluation is required to ensure the initial objective is met and if it is not, reconsideration of how the implementation can be refined. Some traffic calming projects are intentionally temporary to evaluate their effectiveness before permanent investments are made. Traffic calming policies should outline the evaluation process that includes the evaluation criteria, monitoring, timeline and outcomes.

2.2.3 **Traffic Calming Measures**

The CGTC updated the list of traffic calming measures that are deemed to be suitable for use within North America based on their effectiveness on traffic volume, speed, conflicts and neighbourhood environment. The list of measures recommended in Section 4 for LaSalle are taken from this recognized list. Some measures that were included in the first edition have been removed based on the outdated practices and outcomes of their uses. In addition, new common operational and educational practices that can also be used as traffic calming measures are added and a number of emerging technologies are introduced to broaden the options for available measures.

The measures are divided into the following categories: vertical deflection, horizontal deflection, roadway narrowing, surface treatment, pavement marking, access restriction, gateways, enforcement, education, shared space, emerging technologies and measures.

In selecting the most appropriate traffic calming solution for the problem statement and the study location, the Guide included two tables showing the applicability and the potential advantages and disadvantages of each traffic calming measure. Table 3.2 of the Guide outlines which of the measures are suitable for each location type: local/collector, urban arterial or rural arterial. Table 3.3 of the Guide shows what types of problems that the traffic calming measure can address and what types of implication it can potentially cause.

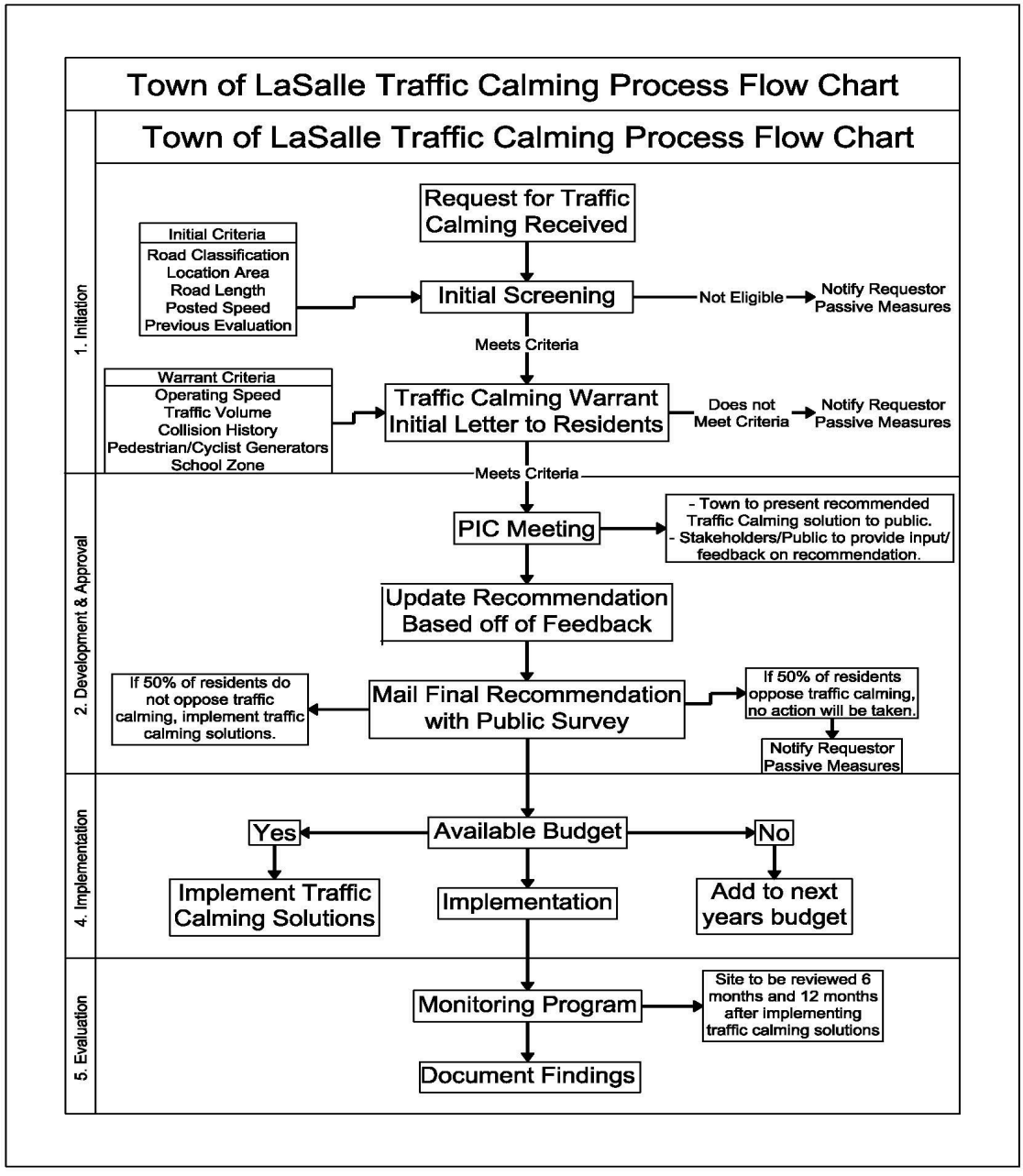
3. Town of LaSalle's Process

The review of other municipal policies and the CGTC was used as the basis of developing the Town of LaSalle's process. The traffic calming process for the Town of LaSalle is intended to provide step by step guidance from the timing of receiving the request to providing solutions to the concerns, whether the result is implementation of traffic calming measures or to provide an alternative response. The process provides transparency and consistency for the Town staff and the public.

3.1 **Traffic Calming Process Flow Chart**

The flow chart in Figure 1 shows the steps and sequence required to effectively manage any request. It shows the various decision points and possible outcomes and makes sure all necessary considerations have been taken into account. Each step is described in the remainder of this chapter.

Figure 1: LaSalle's traffic calming process flow chart



3.2 Initiation

The initiation stage starts when an official request has been submitted in writing or online to the Town Staff. The request can be made by Town staff, an elected official, emergency services (Police & Fire) or any resident of the Town of LaSalle. The resident of the Town must live in the affected area. Once the request has been made, the initial screening and traffic study will be conducted to confirm the need for a traffic calming measure. The initial process is to evaluate and study the area in question to provide clarity to the residents of the affected area.

3.2.1 Receive and Assess Request

All requests will be received in writing or online and managed by staff in the Public Works Engineering Department for data management purposes. Having a formal request process provides an opportunity for the Town staff to gather the necessary information to decrease unnecessary administrative efforts. Once the request has been received, the Town staff will review the request and provide an update to the requestor within a 30-day review period.

3.2.2 Initial Screening Criteria

The initial screening criteria outlines the minimum requirements for a location to be eligible for traffic calming measures. These criteria are developed based on the review of nearby municipalities of similar size and TAC's Traffic Calming Manual.

Table 4: LaSalle's initial screen criteria

Criterion	Requirement
Road Classification	Only local and collector roads are eligible unless specified otherwise
Location Area	Primarily residential area
Road Length	Street segment length must exceed 300 metres [1]
Posted Speed	Posted speed limit must be less than or equal to 50km/h
Previous Evaluation	Specific roadway has not been considered within the last 36 months.

[1]Where the segment of the roadway is not interrupted by a stop sign, traffic signal, cul-de-sac or curve sharper than 30 degrees.

3.2.3 **Primary Letter to Residents**

When a request for traffic calming is received and passes the initial screening process, a letter is circulated to the residents within the study corridor to advise them of the request and the process the Town will follow. A traffic study will be conducted and if the study meets the traffic warrant criteria, a Public Information Meeting will be held to present a traffic calming measure to the residents of the affected area. The purpose of this step is to provide clarity to the residents regarding the potential changes to the neighbourhood.

3.3 **Traffic Calming Warrant**

Subsequent to the initial screening criteria, the operating conditions in the subject area are compared to a set of warrants, approved by the Town. The warrants are intended to help staff determine whether the conditions, as defined by the collected traffic data, indicate a problem that the Town should address. Also, the warrants allow various locations that have been requested to be prioritized when there is infinite funding for improvements.

3.3.1 **Data Collection**

The data required for the warrant process are operating speed, annual average daily traffic (AADT), collision data, and a database of pedestrian/cyclist generators. A collaborative effort with other departments within the Town, and the police service is beneficial for organizing data storage and allocating proper budget. The sources of data required are shown in Table 5.

Table 5: Warrant criteria data source

Criterion	Data Source
Operating Speed	At the time of the request
Traffic Volume	Annual traffic count program or request-specific counts if no suitable data is available (less than 5 years old)
Collision History	LaSalle Police Service
Pedestrian/Cyclists Generators	Town's GIS database
School Zone	Town's GIS database

3.3.2 Development and Approval

Once the traffic study is complete, the required data is assessed to determine the location against the warrant criteria and the process for selecting the appropriate traffic calming measure is followed. The proposed traffic calming strategy is then presented to the residents of the affected area and Emergency Services for feedback. Once the traffic calming measure is finalized using the feedback from the residents and Emergency Services, a survey will be mailed out to the residents of the affected area, including the final design. A minimum response of 50% not in favour of traffic calming solutions is required for the request to fail. The purpose of this step is to confirm that the majority of the residents in the affected area are in support of the recommended traffic calming solution. If funding is not available at the time, implementation of traffic calming solutions will be differed to the following budget year.

Table 6: Warrant screening requirements for LaSalle's traffic calming policy

Criterion	Requirement	Max Points
Operating Speed	One point for every km/h that the 85th percentile speed is between 1-15 km/h over the posted speed limit Two points for every km/h that the 85th percentile speed is between 16-25 km/h over posted speed limit (except for school zone specific speed limits)	35
Traffic Volume	Local Roads: Two and a half points for every 500 AADT Collector Roads: Five points for every 2,000 AADT	30
Collision History	Two points for every collision, not involving vulnerable road uses, within the last 3 years Ten points for every collision, involving vulnerable road uses, within the last 3 years	35
Pedestrian/Cyclists Generators	Places of pedestrian/cyclist generators: Playgrounds/park, senior's center, recreational/community centre, retail centres, libraries, trail connections Five points if there is no continuous sidewalk in the study area	10
School Zone	Five points when in a school zone	5

For locations that satisfy the initial criteria but did not meet the traffic calming warrant, will be considered for passive traffic calming measures discussed in Section 4.1. These measures are relatively low in cost, and often temporary, but can impact driver behaviour through education and awareness.

3.3.3 **Assessment of Eligible Alternatives**

All requests that have reached this stage of the process have passed the initial screening process but did not meet the traffic calming warrant.

Municipalities have found that physical measures, primarily vertical deflections measure have been the most effective at modifying driver behaviours. However, these treatments are usually the most expensive and often municipalities do not have sufficient capital budgets to fund all the projects that meet their warrants. In cases where locations that met the warrants have to wait several years for their improvements to be funded, these residents are unsatisfied and feel their problem is not being addressed.

To avoid this problem, the Town of LaSalle will utilize two types of traffic calming treatments. Type 1 traffic calming measures are low cost but effective ways of changing driver behaviour. They generally consist of signs, pavement markings and temporary installations such as bollards that can change the feel of a road and reduce speed. Type 2 traffic calming measures involve construction of curbs or humps which are higher in cost but may prove more effective.

Site solutions will be based off of administration's recommendation. Funding for the required traffic calming solution will be determined through the Capital Budget.

The point system outlined in Table 6 not only determines whether a location is warranted for traffic calming, but is also used to rank its priority against other projects. The points allocated to the severity of the problem or the characteristics of the environment will assist staff in determining a priority ranking of locations.

3.3.4 **Stakeholder/Public Input**

Once staff have developed a proposed traffic calming strategy, it is important to determine whether the affected community will support the plan. Members of the affected community are encouraged to attend the Public Information meeting to provide feedback on the initial traffic calming solution provided by the Town of LaSalle.

Regardless of the types of measures determined for the location, the affected residents will be sent information about the proposed treatment, provided contact information for questions and surveyed to indicate whether they are in favour. This survey will also outline the required level of support for approval. For Type 1 and Type 2 measures, the public will be consulted via a Public Information meeting. A review period of 30-days is

to be given for the residents to indicate their support. A minimum of 50% of the surveyed must respond, “Not in Favour” of the plan.

The residents of the study area will be advised of the results.

3.4 Implementation

3.4.1 Traffic Calming Funding

Traffic Calming should have an annual envelope in the Town’s Capital Budget with consistent and predictable funding. This allows staff and the public to have realistic expectations about the number of traffic calming projects that can be funded each year and how long it might take for new projects to receive funding. Each year, the traffic calming plan will be based on available funds for the list of warranted locations.

3.5 Evaluation

3.5.1 Monitoring Program

It is important to monitor locations after traffic calming has been installed to confirm whether operating conditions have improved. This monitoring will provide data to confirm the effectiveness of each installation and these results may influence the proposed traffic calming plans for future years. The Town of LaSalle should collect follow up data at traffic calming installations for at least two years. The first year will determine the initial impact of the treatment but the second year is required to determine whether the impact is permanent.

3.5.2 Evaluation

It is important for the residents to receive feedback on the performance of the traffic calming treatments. Often residents can form their own opinion about the effectiveness of the traffic calming but it is important for them to see statistical results from the data collected by the staff. Residents will be encouraged to request follow up data from the Monitoring Program.

4. Traffic Calming Measures

Traffic calming measures included in the policy are selected to suit the geometrics and practices within LaSalle and includes measures that have been implemented in the nearby municipalities. The measures are categorized into Type 1 and Type 2 as discussed in Sections 3.3.3. Type 1 measures include passive measures that can be achieved in a shorter time period for a lower cost such as road narrowing. Type 2 measures may require construction for physical geometric changes such as vertical and horizontal deflections.

4.1 Type 1 Measures

Type 1 traffic calming measures are effective methods to address concerns through less-intrusive road changes when permanent physical road geometry changes are not possible or recommended. These passive measures are typically lower in implementation cost and have a shorter turnaround time for the evaluation period, allowing the Town to address more requests with the given funding and resources. Type 1 traffic calming measures used in LaSalle are as shown in Table 7.

Table 7: Type 1 traffic calming measures

Traffic Calming Measure Description	Example	Considerations
Road Diet Reconfiguration of a road by reducing the number of vehicle lanes to allocate the reclaimed space for other uses (sidewalks, bus lanes, bike lanes, parking)		- Reduces vehicle speeds and conflicts - May affect emergency vehicle response times due to added congestion
Speed Display Devices Interactive sign that displays vehicle speeds as oncoming motorists' approach		- Reduces speed and conflicts - If not enforced, drivers may become immune - An estimate of volume data can be collected
Lane Narrowing Using pavement marking to mark the designated roadway lane width to alert drivers of the appropriate road position.		- Reduce speeds and heightened awareness - Opportunity to redistribute roadway right-of-way for other road users - No construction required

Traffic Calming Measure Description	Example	Considerations
Bollards are often used as a physical eliminator to reinforce the lane width.		

4.2 Type 2 Measures

Type 2 traffic measures typically result in more effective solutions as the physical changes to the road require the drivers to reduce their speed. The three categories of Type 2 measures are vertical deflection, horizontal deflection and access/volume control.

4.2.1 Vertical Deflection

Vertical deflections are physical obstructions for vehicles to traverse. The vertical height difference is designed to cause drivers that are driving above speed limit discomfort to slow down. Certain drivers may reroute their travels to avoid these neighbourhood calming areas, achieving traffic diversion. Vertical deflections used in LaSalle are shown in Table 8.

Table 8: Vertical deflection traffic calming measures

Traffic Calming Measure Description	Example	Considerations
Raised Crosswalks/ Intersections Vertical deflection designed to improve pedestrian safety		Reduces speed at locations where pedestrians are crossing Similar affects to Speed Humps
Speed Hump / Speed Table (intersection) Vertical deflection designed to accommodate the desired operating speed.		Reduces speed and volumes Affects emergency vehicle response times and transit routes
Speed Cushion A raised area on a road similar to a speed hump but does not cover the entire width allowing for large vehicles (bus, fire truck) to straddle the cushion without difficulty.		Reduces vehicle speeds and volumes May slightly affect emergency vehicle response times and transit routes but not as much as speed humps Requires removal in the winter

4.2.2 **Horizontal Deflection**

Horizontal deflection traffic calming measures narrow the road to encourage vehicles to slow down to accommodate other roadway users. These types of measures are effective on roadways with straight geometry for extended length and at areas with high volume of pedestrians and cyclists. Horizontal deflections used in LaSalle are shown in Table 9.

Table 9: Horizontal deflection traffic calming measures

Traffic Calming Measure Description	Example	Considerations
Curb Extensions A horizontal intrusion of a curb into the roadway resulting in a narrow section of roadway.		- Reduces vehicle speeds and conflicts through shortening the crossing distance for pedestrians - Not compatible with bike lanes - Potential loss of on-street parking
Traffic Circle Form of intersection control requiring through traffic to maneuver around the center island.		- Reduces speeds, volumes, and conflicts - Delays emergency vehicle response times - Not suitable for high pedestrian locations

Traffic Calming Measure Description	Example	Considerations
Raised Median Island An elevated median constructed on the centerline of a two-way roadway to reduce the overall width of the adjacent travel lanes		- Reduces speeds marginally - Reduces conflicts as pedestrians can take refuge on medians - May restrict access to driveways - May reduce room for cyclists

4.2.3 **Access/Volume Control**

Access and volume control measures are intended to deter vehicles to make certain movements to prevent vehicles entering a roadway while allowing pedestrians and cyclists. These measures are typically used for locations with high volumes of short cutting traffic. Short cutting traffic is defined as vehicles using a road that was not intended to carry these vehicles based on its classification. Since these traffic measures may disrupt the connectivity of the overall transportation network. It is recommended when other traffic measures are deemed not effective, and with definitive neighbourhood support. Access and volume control measures used in LaSalle are as shown in Table 10.

Table 10: Access/volume control traffic calming measures

Traffic Calming Measure Description	Example	Considerations
Diverter A raised barrier that lies diagonally across an intersection that forces traffic to turn and prevents it from proceeding through		- Reduces volume significantly - Does not do much regarding speed - Not ideal for emergency vehicles
Raised Median Through Intersection Asphalt island located on the centerline of a two-way roadway through an intersection that prevents left turns and through traffic.		- Reduces volume by eliminating cut-through traffic - Restricts resident access - May restrict emergency vehicle access
Directional Closure Curb extension or vertical barrier extending to about the centerline of a roadway prohibiting one direction of traffic.		- Reduces speed, volumes, and conflicts through shortening the pedestrian crossing - Restricts resident access - May complicate street sweeping and snow removal

4.3 Passive Measures

Locations that satisfy the initial criteria but did not meet the warrant, passive traffic calming measures are considered. These measures are relatively low in cost, and may be temporary, but the concerns may be resolved through modified driver behaviour from education and awareness. Many of the passive measures are the community-led initiatives; these initiatives are proposed and developed by local residents which typically result in higher engagement level. These initiatives do not require any changes to the road geometry or interfere with any operational work by the Town. The Town will work with the residents to review, approve, and monitor any passive measures to ensure safety for all users, and that potential impacts on municipal and traffic operations

are identified and mitigated. Passive traffic calming measures that can be considered in LaSalle are shown in Table 11.

Table 11: Passive traffic calming measures

Traffic Calming Measure Description	Example	Considerations
Location-specific Enforcement Police enforcement in a specific area known for traffic and driving infringements		- Meant to warn drivers, increase education - Enforcement for speed reduction and awareness
Resident Lawn Signs Signs such as 'Please Slow Down' and 'Thank You for Slowing Down' signs to remind drivers to slow down		- Meant to communicate with the drivers that children and other vulnerable road users are in the area - Based on resident voluntary commitment
Education Campaign To raise awareness of road safety issues to all road users. Presented information can include traffic calming procedure, proper use of the measures, traffic calmed locations, and preventative safety measures.		- Through workshops, pamphlets, and social media to raise awareness - Combine campaigns with information of law enforcements for greater impact - Can focus on different audience groups with various messages
Traffic-Calmed Neighbourhood Sign to notify motorists of traffic calming measures such as speed humps		- Meant to make motorists aware that they are entering a traffic-calmed zone - Usually combined with other measures

4.4 All-Way Stop Control

Municipalities are often faced with requests for all-way stop control as a means to address speeding concerns. However, traffic engineering standards including the Ontario Traffic Manual (OTM) clearly indicate that stop signs are means of controlling the right-of-way at intersections, and not a tool to address speeding. These standards include warrants for all-way stop control based on intersection volume and safety.

5. Roles and Responsibilities

5.1 Department Head

5.1.1 The Director of Public Works is responsible for approving and allocating a specified budget for annual Traffic Calming Measures.

5.2 Managers and Supervisors

5.2.1 The Supervisor & Manager of Engineering are responsible for overseeing the Traffic Calming requests and process. They are responsible for the implementation of any Traffic Calming Measures that are warranted.

5.3 Employees, Volunteers, etc.

5.3.1 The Civil Engineering Technologists are responsible for receiving and documenting Traffic Calming Requests, initiating the process using the Traffic Calming Policy to determine if the need for Traffic Calming solutions is warranted and to recommend appropriate traffic calming solutions.

6. References and Related Documents

TAC’s Canadian Guide to Traffic Calming 2018

Town of LaSalle Transportation & Active Transportation Master Plan