
Date

The following was adopted at the Regular Council Meeting held on August 20, 2019 by Resolution No. 19.08.245.

Purpose

The Traffic Calming & Road Safety Policy presents a consistent process for how traffic calming is to be applied and provides clarity to the community, staff, and Council. This Policy provides guidance on the administration, planning, design, and implementation of traffic calming in the District of Lake Country (“District”) and addresses requests for traffic calming in a meaningful way.

This Policy is intended to serve as a guide. There may be instances where staff determines actions are required and then implement solutions following normal workflow policies, protocols, and practices.

Policy

1. PRINCIPLES, OBJECTIVES AND GOALS

1.1. Definition of Traffic Calming

Traffic calming is as defined by the Institute of Transportation Engineers (ITE) as follows:

Traffic calming is 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.

Physical measures typically consist of vertical deflections, horizontal deflections, roadway narrowing treatments, surface treatments, obstructions and gateways. Examples include speed humps, speed cushions, raised medians, curb extensions, traffic calming circles and diverters.

The term ‘speed management’ is used in this Policy to describe non-intrusive measures including pavement markings and speed display devices. Other measures used to alter driver behaviour include education and enforcement. Educational measures typically include campaigns on drivers’ issues such as distracted driving, impaired driving and speeding, and enforcement usually involves a police presence.

The role of District staff in promoting safer and more livable streets with traffic calming is to facilitate the engineering and some of the education components of the three E’s (engineering, education, and enforcement). Education on traffic calming is provided to the public through the engagement process; where residents learn about traffic calming, the process, thresholds and warrants, and the advantages and disadvantages of implementing various measures.

1.2. Objectives and Goals

The overall goal of the Traffic Calming and Road Safety Policy is to facilitate a safe and comfortable environment. In order to achieve this goal, traffic calming should be used to restore a street to its intended function and should be installed to achieve one or more of the following:

- Reduce vehicle speeds;
- Discourage/Reduce neighbourhood short-cutting;
- Minimize conflicts between vehicles and other road users; and
- Improve the neighbourhood environment.

The objectives tie into the transportation related goals of Lake Country's Official Community Plan (2018). Traffic calming can facilitate a more comfortable environment to encourage users to choose sustainable modes of transportation. Vehicular traffic volume and speed reductions on local streets improve safety for all users including cyclists, pedestrians and vehicles. Traffic calming can enhance and preserve the livability of a neighbourhood by reducing the undesired impacts of traffic; specifically, the reduction of noise, air pollution, and visual intrusion.

1.3. Principles of Traffic Calming Process

When implemented properly, traffic calming measures can be effective in reducing motor vehicle speeds, decreasing traffic volumes, eliminating conflicts between users, and enhancing the neighbourhood environment. They can also induce negative effects by introducing conflicts into the roadway, increasing operational and maintenance costs, reducing mobility for residents, and incurring delay on transit operations and emergency response times. As such, traffic calming is a dynamic and challenging process that is sensitive to the specific context and neighbourhood to which it is applied. Therefore, the principles of effective traffic calming are as follows:

- **Identify the Real Problem** – Perceived issues may be substantially different from the real problem. Solutions intended to resolve the perceived issue may exacerbate the real problem.
- **Quantify the Problem** – Collect the appropriate data to confirm and quantify the suspected problem. Some problems may be directional, by time-of-day, or temporary in nature. Data collection may include traffic counts, vehicle classification counts, speed studies, license plate surveys, and collision records.
- **Consider the Adjacent Road Network** – Drivers typically do not short-cut through neighbourhoods unless there are issues with the collector / arterial system in the vicinity. These should be resolved and evaluated prior to calming neighbourhood traffic.
- **Consider Education and Enforcement First** – Education and enforcement typically do not require physical measures to be installed, tend to be cheaper, and faster to implement; however, they tend to be demanding in resources. Where traffic calming has been implemented to the satisfaction of a neighbourhood, this may change over time and education to new residents may be necessary to inform them of the purpose, process, and dynamics of traffic calming.
- **Traffic Calm Areas, Not Sites** – The context of the larger area / neighbourhood must be considered when traffic calming rather than by a specific site to avoid shifting issues to other locations.
- **Force Compliance through Design** – As enforcement of traffic issues has decreased over the past decades due to other demands, measures that force compliance are necessary as signs and paint may have limited effects on driver behaviour. Design elements of these features include raised pavement, non-mountable curbs, bollards, and medians.
- **Minimize Impacts to Access** – Diversions, closures and restrictions may have a significant impact to the access of adjacent properties. Care should be taken to present options that maintain access and to adequately describe impacts if access cannot be maintained.
- **Maintain Non-Motorized Access and Mobility** – Traffic calming features should permit cyclists and pedestrians to travel unimpeded, while slowing or obstructing the targeted motor vehicle traffic.

- **Accommodate Service Vehicles** – Service providers should be consulted early in the process to minimize impacts and delays. Transit, waste collection, snow clearing, street cleaning, and emergency service (e.g. police, fire, ambulance) vehicles all have unique maneuvering requirements.
- **Community and Neighbourhood Support** – Successful traffic calming is achieved by including public engagement throughout the process. Input early in the process allows the community to identify their issues and community support on the final implementation plan will ensure acceptance by the community.
- **Monitoring and Follow-Up** – Successes and failures in traffic calming should be understood through follow-up data collection and comparison to data collected before to help determine the impact of the traffic calming feature. Some traffic calming devices may be necessary to implement on a temporary trial of six months to one year.

2. CONTEXT & APPLICATIONS

2.1. Road Types

The District has varying road designs to support a multitude of road user types and trip types. The roadways are largely broken into two categories:

- 'Roads' generally referring to rural cross-sections, limited access, and low-density land use; and
- 'Streets' generally referring to urban cross-sections, higher access density, and supporting the public realm.

Streets are more conducive to traffic calming where roads may be better addressed by speed management. The application of either of these types is designated on the District's Road Classification Map shown in the *Official Community Plan 2018 – 2038 (Bylaw 1065, 2018)*.

2.2. Road Hierarchy

The road network is comprised of various road classifications to provide different levels of mobility and access. The functions of these roadways must be considered and maintained when planning for traffic calming. The Official Community Plan defines each of the classifications. Generally, the application of traffic calming to the road hierarchy should be considered as follows:

- **Arterial:** Limited to speed management techniques.
- **Major Collector:** Limited to speed management techniques and horizontal deflection.
- **Minor Collector:** Traffic calming on minor collectors must use vertical deflection with caution and may include speed management.
- **Town Centre:** Features must support pedestrian activity while not adversely impacting service and delivery vehicles.
- **Local Streets:** Traffic calming is most often applied to local neighbourhood streets.
- **Rural Roads:** Traffic calming must preserve agricultural operations limiting the use of horizontal and vertical deflection.

2.3. Hillside Roads

Traffic calming measures implemented on hillside roads need to be considered carefully. Steep grades limit the types of traffic calming devices that can be safely and effectively used. Devices that create vertical deflection should be used with caution for grades over 5%, and restricted for grades over 8%. Hillside development roads tend to extend farther away from the major roadway network and may induce higher travel speeds. Collected data trends indicate that uphill travel speeds tend to be similar to downhill travel speeds.

2.4. Landscaping

Landscaping is important for traffic calming to enhance the neighbourhood environment and provide supporting function to the traffic calming devices, when applicable. Taller plantings such as street trees can provide visual framing and vertical elements to encourage slower speeds.

3. TRAFFIC CALMING THRESHOLDS

The following thresholds are used to verify if traffic calming is warranted. Thresholds follow recommendations from the Canadian Guide to Traffic Calming for vehicular speeds, volumes and shortcutting on various roadway classifications. These thresholds are typical and will be assessed within the road context by the District prior to any traffic calming implementation.

	Threshold Limits for Traffic Calming	
	Volume (Daily Traffic)*	Operating Speed#
Arterial	Requires discrete assessment by the District.	
Major Collector	>5000	>10km/h over the posted speed limit
Minor Collector	>3000	
Town Centre	>3000	
Local Streets	>1000*	
	25% of vehicles are short-cutting*	
Rural Roads	>1000	

* Volume thresholds should not apply to areas that are near or adjacent to school, as school traffic would result in traffic volumes over these thresholds.

Operating speed is defined as the 85th percentile speed – the speed at which 85% of traffic is travelling at or below.

4. TRAFFIC CALMING PROCESS

4.1. Response to Traffic Calming Requests

Step 1: Initial Screening

Upon receipt of a written request from residents, an initial screening will be conducted to determine if next steps are warranted. Screening evaluation criteria include:

- If an evaluation has been completed in past five years;
- If road improvements are identified in the five-year capital plan;
- Staff capacity and other priorities; and
- If other tools are appropriate (e.g. enforcement, signage, etc.).

Should the next steps be warranted, the District will review and consider the request. Staff will collect (as necessary) and review technical data to determine the validity and nature of the concern.

Step 2: Data Collection

Data and information will be collected and reviewed to quantify and qualify concerns. Data may include:

- Traffic volume and speed counts;
- Collision history;
- Engagement with residents;
- Assessment of roadway configuration; and
- Licence plate survey.

Step 3: Preliminary Evaluation

Following the review of the technical data, the District may determine:

- 1) Traffic calming is warranted and:
 - a) A study should be initiated for the neighbourhood/area based on the road classifications and traffic calming thresholds.
 - b) Issue is site specific (i.e. no impacts to the adjacent road network) and can be completed independently.
- 2) Traffic calming is not warranted, however:
 - a) An issue may exist with vulnerable road users along roadway. Review capital plans for sidewalks and intersection improvements.
 - b) An issue may exist with pedestrian crossings. Conduct a crosswalk warrant and assess the need.
 - c) An issue may exist with traffic volumes at a given intersection. Conduct a signal warrant and review capital plans.
 - d) An issue may exist with the safe operation of an intersection. Review capital plans for intersection improvements. Engage ICBC or qualified road safety engineer to conduct an in-service road safety review and determine suitable mitigation.
 - e) An issue may exist with school operations during peak pick-up and drop-off periods. Conduct an assessment of school operations with school and School District. A Safe Routes to School Program may also be investigated if one has not been completed.
 - f) An issue may exist with sight line constraints. Identify sight line constraints, available sight distances, and mitigate obstructions (e.g. clear foliage), as warranted.
 - g) A temporary traffic issue may exist due to a construction activity and/or detour. District will review if there is a preferred route in consideration of road hierarchy and coordinate with industry, as practical.

- 3) Traffic concern is not valid.

It is important that communication is maintained with public. If a full neighbourhood-level study is initiated, one or two open houses may be needed to identify all issues and garner support from the neighbourhood.

Step 4: Initial Community Engagement

The initial community engagement session is intended to obtain input to adequately understand the concerns. It may also provide an opportunity to educate the neighbourhood and community on traffic calming. If other relevant issues come up during consultation, additional data collection may be required.

Step 5: Problem Definition / Concept Generation

From the initial community engagement and data collection a problem definition will be developed for each relevant issue. Appropriate measures to address the problems will be developed in context to the road classification, built form, surrounding network, and neighbourhood. Options for each issue will be developed for review and consideration by staff prior to Council and the public.

Step 6: Inform Council

Prior to public consultation, staff will inform Council on the traffic calming initiatives underway, progress, and schedule. This may be conducted through a report or informal update to garner support with Council on the traffic calming initiatives.

Step 7: Public Consultation

Options will be presented to the public to gauge support and/or select preferred solutions. The District will require 60% of the neighbourhood to support before proceeding. Staff will determine the type and level of public engagement required.

Step 8: Present to Council

The options supported by the neighbourhood will be presented to Council for approval to proceed including budget allocation.

Step 9: Implementation

Establish traffic calming measures. Provide information to affected public of proposed changes for input. Traffic calming improvements are dependent on Council approval of budgets.

Step 10: Installation

Complete detail design and tender construction of approved traffic calming measures for installation.

Step 11: Monitoring and Evaluation

Following installation, monitoring and evaluation on the roadways should be completed. Data should be collected to evaluate the effectiveness of the implemented devices at the following intervals:

- Immediately after installation.
- Approximately six months after installation.
- Approximately one year after installation.
- As needed.

Data should be collected as close to the initial locations prior to implementation of the devices. Staff will determine necessary levels of monitoring and follow-up.

4.2. New Development

In certain situations, traffic calming should be implemented in new developments if the following situations are expected on new roadway infrastructure:

- Potential for short-cutting due to the new connections having a shorter route to a main road;
- Geometric conditions that may facilitate speeding (e.g. high operating speeds, straight roadway with no curves); and
- Unsafe conditions due to geometric factors.

If the above situations are to occur, then traffic calming should be evaluated as part of the design for the new roads. An effective systems-based design approach requires that the principles of traffic calming be integrated to avoid the undesirable conditions that traffic calming aims to correct.

4.3. Major Roads (Arterials / Collectors)

The application of traffic calming measures on Arterial and Collector roads should be considered carefully since these roads serve an intended function, and traffic calming may decrease the roadways function/service. The District (in coordination with local road authorities) should evaluate if traffic calming is an option, and should only consider it when it would improve collision prone areas, pedestrian safety, modal integration and compatibility with adjacent land use.

Additional supporting technical information can be found in the *Lake Country Traffic Calming and Road Safety Policy Technical Report* by Watt Consulting Group dated May 2, 2019.

Original signed by James Baker

Mayor

Original signed by Reyna Seabrook

Corporate Officer