AGENDA ITEM NO: 7.2

MEETING DATE: May 7, 2024

STAFF REPORT – COVER SHEET

SUBJECT:	Traffic Calming Policy	DATE:	April 26, 2024
DEPARTMENT:	Engineering	PREPARED BY:	Doug Mossey

1. SUMMARY OF ISSUE:

The City receives road safety complaints on a weekly basis. Current practice is to address speed concerns through targeted education and enforcement through the City's Safe Roads program. Physical changes to the road network to improve road safety are often implemented through capital or active transportation projects. Council approved Traffic Calming Policy F-13 in 2000 to deal with neighbourhood speed concerns, however Council placed a moratorium on traffic calming in 2002. Over the past several months, staff have reviewed current best practices and the effectiveness of previous traffic calming installations. This information was presented to the Transportation Advisory Committee for feedback and a new policy has been drafted for Council's consideration.

A decision is required whether to withdraw the moratorium and approve the amended traffic calming policy.

2. RECOMMENDATION:

That Policy Directive F-13 'Traffic Calming Policy' be approved by Council, as amended.

Kara Jefford, Director of Engineering

3. FINANCE COMMENTS:

Traffic calming measures can be implemented, where appropriate, as part of upcoming identified capital roads projects and development. A dedicated traffic calming fund may be considered as part of Councils future budget deliberations.

Glen Savard, Director of Finance

4. CHIEF ADMINISTRATIVE OFFICER'S RECOMMENDATION/COMMENTS:

Supports recommendation.

David Blain, CAO

STAFF REPORT ON
Traffic Calming Policy

PREPARED BY:	Andrew Pipke	DATE:	April 25, 2024
POSITION:	Senior Road Safety Specialist	DEPARTMENT:	Engineering

1. DEFINITION OF ISSUE:

The City receives road safety complaints on a weekly basis. Current practice is to address speed concerns through targeted education and enforcement through the City's Safe Roads program. Physical changes to the road network to improve road safety are often implemented through capital or active transportation projects. Council approved Traffic Calming Policy F-13 in 2000 to deal with neighbourhood speed concerns, however Council placed a moratorium on traffic calming in 2002. Over the past several months, staff have reviewed current best practices and the effectiveness of previous traffic calming installations. This information was presented to the Transportation Advisory Committee for feedback and a new policy has been drafted for Council's consideration.

A decision is required whether to withdraw the moratorium and approve the amended traffic calming policy.

2. BACKGROUND:

2.1 In the mid-1990s the City faced pressure to slow traffic and reduce cut-through traffic along some local roads. Residents pushed for traffic calming on several streets throughout the City.

2.2 Traffic Calming is defined by the Institute of Transportation Engineers (ITE) as "the combination of mainly physical measures to reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users."

2.3 In response to speed concerns from residents of McNaught Road, speed humps and curb bulges were installed as part of the 1999 Asphalt Rehabilitation program.

Figure 1: Speed Hump on McNaught Road (1999)

2.4 Initially the speed humps were seen as a success. A survey of 76 McNaught area residents was conducted by a research firm who noted that 73% of residents perceived slower driver speeds. A speed study completed before and after the project confirmed the resident's observations, noting a drop in average speed by 11km/h and a 53% decrease in vehicle volumes.

2.5 Not long after the works on McNaught Road were completed, residents from other areas of the City noticed the changes and wanted similar improvements on their streets. To more consistently and fairly respond to these requests, Council directed staff to create a Traffic Calming Policy, which was approved in fall of 2000 (see Appendix A).

2.6 Traffic on McNaught Road decreased because drivers diverted to use other parallel routes. The City received complaints from the residents of Carleton Street to the west of McNaught Road, which had a 20% increase in traffic volumes following the McNaught Road speed hump project. In response, the City installed curb extensions and traffic buttons on all nearby parallel routes between Broadway and McNaught Road, as shown below.

Figures 2 & 3: Traffic Buttons on Coote Street and Windsor Street (2001)

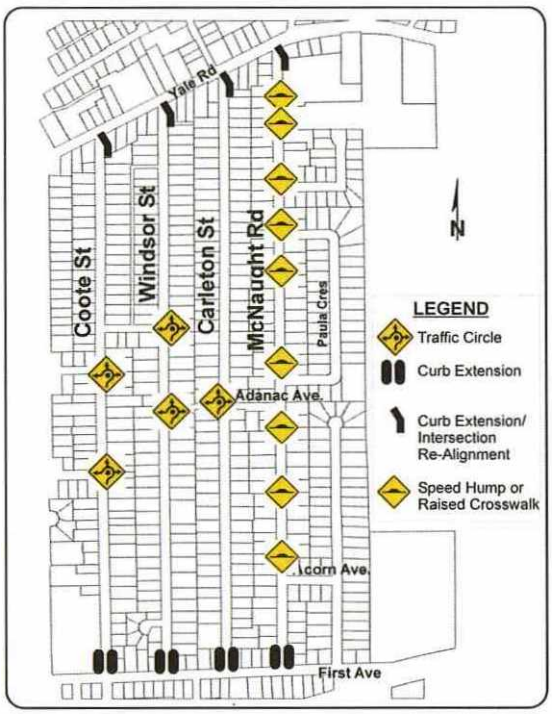

Figure 4: Coote, Windsor, Carleton, and McNaught Traffic Calming Plan

2.7 Around the same time, speed reductions were installed on Wiltshire Street following resident requests for a road reclassification to allow for traffic calming, removal of transit services, and lower speed limits. After installation of the signs, the City conducted a survey of fronting residents to see their opinions about the changes, and 75% of residents felt the changes were ineffective.

2.8 Additional discontent built along McNaught, Coote, Carleton, and Windsor. People were driving the wrong way around the traffic buttons and emergency services expressed concerns about significant delays in emergency response times over the speed humps.

2.9 Residents were also growing frustrated in areas where traffic calming was not approved based on the Traffic Calming Policy. They spent hours organizing a petition only to find out that they were not eligible for improvements.

2.10 The City placed a moratorium on new traffic calming in 2002. Reasons included negative resident feedback, slower emergency response, risks associated with speed humps at higher speeds, and resource intensive policy implementation. Further discussions on amending the policy occurred in late 2004, however the moratorium is still in place 20 years later.

3. ANALYSIS:

3.1 Between January 1 and April 24, 2024 the City has received over 50 speeding and traffic calming requests, showing that road safety continues to be a concern of residents.

3.2 Although the moratorium on traffic calming is still in place, in practice it has effectively been a moratorium on speed humps and traffic buttons. Road safety improvements continue to be implemented throughout the City on new capital and development projects, although not explicitly described as traffic calming. This includes road narrowing (road diets), boulevard vegetation, roundabouts, parking pockets, speed reader boards, and Rectangular Rapid Flashing Beacon (RRFB) crosswalks, as shown below. These measures are generally supported and do not face the same level of scrutiny and concern as speed humps and traffic buttons did.

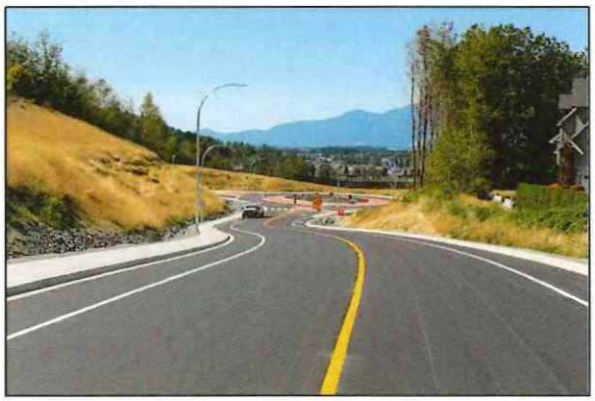

Figure 4: Teskey and Ross Roundabout

Figure 5: Spadina Avenue Improvement Project

Figure 6: Garrison Crossing Development

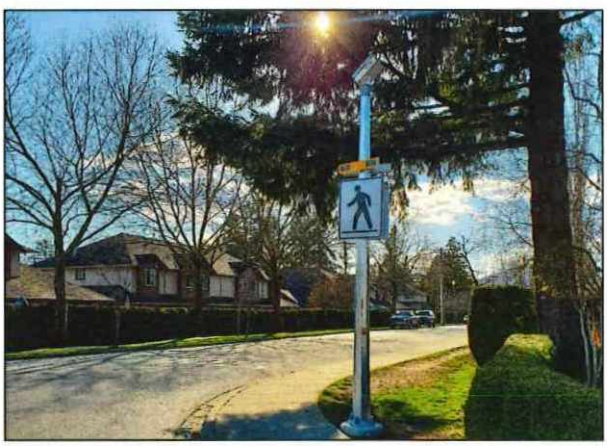

Figure 7: Manuel Road RRFB Crosswalk

3.3 This draft policy is more detailed than the previous policy and includes information about the policy's purpose, definition, objective, application, guiding principles, permitted traffic calming measures, finances, and procedure for implementing traffic calming requests.

3.4 This policy shares many similarities with other policies in the region, but staff implemented several changes to better reflect the needs and feedback from the community. These major differences include:

a. **Speed Hump Moratorium**

While speed humps have noted evidence for slowing traffic, they will not be considered further due to negative impacts on emergency services response times and the other factors noted earlier in this report.

b. **Options for Arterial Roads**

While the primary goal of arterial roads is to convey traffic efficiently and maintain clear emergency service access, the routes also have some of the City's highest collision rates. Staff included emergency services friendly measures such as raised medians, driveway turn restrictions, boulevards, entrance gateways, speed reader boards, and vegetation as options to improve safety on these roads.

c. **Multiple Warrant Criteria**

There are many factors when evaluating safety. Whereas many communities only assess a complaint if there is a minimum traffic volume or speed on the roadway, staff do not want to base decisions based on a limited criterion. Instead, this draft policy analyzes potential projects on a lengthy review criterion, such as:

- Traffic speeds
- Traffic, pedestrian, and cyclist volumes
- Collision history
- Impact to emergency services, transit, and school buses
- Cost / benefit ratio
- Connections to long term plans
- Current and future land use
- Road classification
- Proximity to key amenities

d. **No Petition Process**

The majority of traffic calming policies in other municipalities require a lengthy petition and a minimum threshold of public support before a project will be implemented. Staff do not recommend such a system for the following reasons:

i. *Many petitions do not warrant action:* The majority of residents rarely engage with their municipality. The petition process is one of the first opportunities where most residents take an active approach to civic engagement. Speed studies that follow successful neighbour petition submissions rarely meet the minimum warrant for changes. When this occurs and residents are informed that their hard work will not lead to changes, this can create a negative interaction between the City and a community.

ii. *Equity is not a major factor in decision making:* Petition based policies benefit the most engaged communities which are often in the higher socio-economic areas, leaving the most vulnerable road users with fewer improvements.

iii. *Petitions only capture fronting resident feedback:* Petitions only capture the feedback of residents at the time of consultation and do not reflect the perspectives of all road users, such as cyclists, pedestrians, and drivers who also use the facility. While more weight should be placed upon fronting residents, the City's roads are funded by all residents and decisions should be made equitably.

3.5 Even though this policy aims to take a better supported data driven approach to traffic calming, staff anticipate a few challenges in its successful execution. Those challenges and proposed mitigation techniques are as follows:

a. **Balancing Speed Warrants, Equity and Popular Opinion**

i. *Challenge:* Safety measures aren't always popular and choosing support thresholds and consultation limits aren't easy. Installing infrastructure where it's most supported doesn't usually match where projects are most warranted based on speed data and accident history due to varying levels of civic engagement among communities.

ii. *Solution:* Balancing investments in all areas of the City will be factored into project prioritization. If projects are warranted based on speed or safety, communications such as letters, social media, or surveys will be sent to residents providing an opportunity for feedback on upcoming works.

b. **Managing a Lengthy Priority List**

i. *Challenge:* Staff anticipate a high volume of traffic calming requests, which can be a strain on resources. There will be high expectations from the public and it will be challenging to meet resident demands.

ii. *Solution:* There are multiple opportunities for traffic calming implementation. It can be included with major capital projects, new developments and, partnered with other minor capital projects such as concrete works (sidewalks) and Cycle Vision projects. Additionally, safety is a major factor in receiving grants through ICBC and the provincial and the federal governments. Having such a policy may unlock new funding opportunities.

3.6 Staff collaborated with the Transportation Advisory Committee throughout the development of the policy, as attached in Appendix B. During the April 18, 2024 meeting, the Committee unanimously voted for the following recommendation:

a. That the Transportation Advisory Committee supports the draft Traffic Calming Policy; and further, that the draft Traffic Calming Policy be forwarded to Council for approval.

4. RECOMMENDATION & SUBSTANTIATION:

Recommendation:

That Policy Directive F-13 'Traffic Calming Policy' be approved by Council, as amended.

Substantiation:

The City receives a high volume of traffic calming requests. The City placed a moratorium on Traffic Calming in 2002, however a review of the policy is recommended. Having a policy will better allow staff to respond to resident concerns, bring the City more in accordance with today's best speed management practices, and provide more tools to improve road safety.

~~MAY 2002~~

~~"THIS POLICY HAS BEEN SUSPENDED BY COUNCIL UNTIL FURTHER NOTICE"~~

POLICY DIRECTIVE NO. F-13

SUBJECT: TRAFFIC CALMING POLICY

APPROVAL DATE _____ LAST REVIEW DATE _____

REFERENCE: _____

~~1. Council recognizes the value of traffic calming as a tool to discourage nuisance traffic from local residential roads and therefore enacts this Policy.~~

~~2. Traffic calming measures are appropriate, and will only be considered for installation on roads classified as "Local" with reference to the Official Community Plan, Figure 10.~~

~~3. Traffic calming measures will only be considered where affected property owners are substantially in agreement. The majority of those affected by the improvement must stipulate agreement in writing.~~

~~4. Traffic calming measures will only be considered where traffic volumes and traffic speed exceed that experienced on other comparable roads. Primarily, comparable roads within the neighborhood will be utilized followed by other similar roads in the community.~~

~~5. Traffic calming installations must be approved by Council~~

Purpose:

The Traffic Calming Policy has been enacted for the purpose of establishing and maintaining a consistent procedure for traffic calming applications in the City of Chilliwack. Additionally, this document provides some basic information regarding traffic calming solutions and when they can be effectively implemented.

A. Definition:

Traffic calming is the implementation of engineering measures to influence driver behaviours on a road to address speeding or safety issues. The goal of traffic calming is to improve safety and the quality of life of a neighbourhood without unduly compromising the accesses to residents' homes and businesses. These measures can come in various forms to suit each unique scenario and problem, including horizontal deflection (curb extensions, traffic circles, etc), signs and signals (right on red restrictions, left turn phasing, etc) and obstructions (raised medians, right-in/right-out islands, etc).

B. Objective:

All road users are prone to error and that must be accounted for in the City's transportation system. Roads should be safe for all street users including pedestrians, cyclists, and drivers. Traffic calming measures are intended to reduce the number of conflicts or risk of conflicts between users, and when conflicts occur, reduce the harm of the conflict. The objective of this policy is to reduce excessive vehicle speeds and introduce safety buffers through engineering measures.

C. Application:

This policy shall be used for traffic calming requests on City owned streets within the boundaries of the City of Chilliwack. Traffic calming measures shall be consistent with the measures identified below, and where direction is not explicitly given, shall follow best practices such as the Transportation Association of Canada's (TAC) Canadian Guide to Neighbourhood Traffic Calming or the Province of British Columbia's BC Community Road Safety Toolkit.

Policy and Guiding Principles:

The traffic calming policy will be dictated by the following guiding principles which will be applicable to all traffic calming measures. They will ensure that all cases are analyzed based on the same criteria.

1. Identify the Real Problem:

It is essential to thoroughly analyze each situation independently and determine the root of the problem. Traffic networks are complex, therefore collecting and carefully reviewing reliable data is essential to have an informed decision-making process. Addressing the immediate concern without this detailed review could exacerbate the original problem.

2. Road Classification:

While traffic calming measures will be considered on all roads in the City, the majority of calming installations will take place on local or collector roads to ensure sufficient emergency response times can be maintained Citywide. The City's road classifications can be found on the online GIS map at maps.chilliwack.com. Traffic calming measures should be carefully considered on certain roads, such as high demand truck routes, arterial routes, agricultural routes, transit routes, emergency response routes and major roads leading to fire stations and police stations. The types of traffic calming measures that are recommended for the various classifications of roads can be seen in Table 1 below.

3. Area Wide Traffic Calming Consideration:

Traffic calming measures shall not be considered for individual streets until the impact on adjacent streets are first examined. The entire neighbourhood network that is affected by the proposed traffic calming measures should be clearly defined and considered for spillover effects;

otherwise the issue may simply shift to other streets. Traffic calming will only be considered on individual locations when a neighborhood-wide traffic calming plan is deemed inappropriate. Additionally, nearby higher classification routes will be analyzed for possible improvements that may alleviate the traffic safety concern.

4. Road Network Connectivity:

To maintain road network connectivity, major neighbourhood accesses and egresses should not be fully restricted to ensure minimal impact to residents, emergency vehicles, and other community stakeholders.

5. Pedestrians and Cyclists Considerations:

Any improved safety measures should not in any way impede or slow other non-motorized modes of transportation such as cycling and walking. Improvements are to be in accordance with the City's Active Transportation Plan and Cycle Vision Plan.

6. Data Driven Improvements:

Most traffic calming policies in other municipalities require a petition and/or a minimum threshold of public support and a clearly defined warrant before a project will be implemented. This policy does not utilize a petition-based process, however several warrants will be considered as part of the traffic calming study and plan. Although resident support is a factor in determining priorities, this is to reduce the politicization of safety measures and to ensure that resources go to where they are most impactful.

7. Focus on Horizontal Deflection and Obstruction Based Calming:

Although vertical deflection such as speed cushions, speed tables, raised crosswalks, and speed humps may be effective in certain circumstances, their positive impacts are limited due to the requirement for sufficient emergency services response times and resident feedback about noise, discomfort, and some drivers travelling more dangerously over speed humps than before. With this in mind, the City is focussing its traffic calming efforts on horizontal deflection, road diets, and obstructions to calm traffic. Current permitted traffic calming tools are listed below. To account for changing best practices, Staff may add additional traffic calming tools throughout the life of the policy. Further information about each calming method can be found by clicking on the link attached to each title or by visiting the Pedestrian Safety Guide and Countermeasure Selection System at http://www.pedbikesafe.org/PEDSAFE/countermeasures.cfm .

Table 1: Potential Traffic Calming Measures Based on Road Classification

	Traffic Calming Method	Local Roads	Major and Minor Collector Roads	Major and Minor Arterial Roads
Horizontal Deflection	Choker / Chicane – One	✓		

	Lane			
	Choker / Chicane – Two Lane	✓	✓	★
	Curb Extension	✓	✓	★
	Curb Radius Reduction	✓	✓	★
	On Street Parking	✓	✓	★
	Raised Median Island	✓	✓	✓
	Traffic Circle / Roundabout	✓	✓	✓
	Cycle Lane / Multi -Use Pathway	★	✓	✓
	Traffic Button	✓	✓	
	Road Diets	✓	✓	★
	Gateways		★	✓
Vertical Deflection	Speed Humps / Bumps			
	Raised Crosswalk			
	Speed Cushions			
	Raised Intersection			
	Left Turn Calming	★	✓	✓
Signals and Signs	Right Turn on Red Restriction	★	★	★
	Left Turn Phasing	★	★	✓
	Rectangular Rapid Flashing Beacon (RRFB) Crossings	★	✓	✓
	Leading Pedestrian Intervals	★	★	★
	Speed Reader Boards	★	✓	✓
Obstruction	Intersection Channelization	✓	✓	✓

	Right In / Right Out Island	★	✓	✓
	Diagonal Diverter	✓	★	
	Vegetation / Trees	✓	✓	✓
	Bollards	✓	✓	✓

✓ : Typical Practice
★: Implemented Under Special Conditions

Finance:

Projects will be prioritized and implemented based on annual budget allocations, however additional funding may also come as a part of other capital improvements when there are shared goals. Projects will be prioritized based on the criteria described further in the next section. In addition to individual traffic calming projects, traffic calming measures can be implemented as part of project development standards. When a new development is planned, the developer may be required to provide certain neighbourhood improvements at the discretion of the Director of Engineering.

Procedure:

The procedure for a traffic calming request can be split into the following phases, further described below:

- Determine if study will be initiated
- Initiate the study
- Identify the issues
- Develop a plan
- Implement the plan

1. Determine if study will be initiated

Should a resident have traffic calming concerns within their neighbourhood, the requestor shall submit a traffic calming request to the City's Engineering Department by phone, email, or in person. Engineering Staff will follow up with the resident to gather all relevant information and share further information about the City's traffic calming policy.

Many requests stem from individual or unique circumstances. Staff will determine whether additional study is required and respond to the resident accordingly to inform them of how the City will proceed.

2. Initiate a study

Once the request is determined to fall within the conditions of the guiding principles of the policy, an initial traffic calming study will be initiated to determine whether traffic calming may be implemented. Timing of this initial study will depend on staff capacity and the volume of requests.

Traffic volumes and speed data will be collected to warrant further analysis for traffic calming. Although there is no minimum traffic volume required to warrant review, roads with daily traffic volumes of greater than 1000 vehicles per day and 85th percentile speeds that exceed the posted speed by 10km/h or more will have greatest priority.

Note: 85th percentile speed is the speed that 85% of vehicles are travelling at or below and is a standard measure for speeding.

3. Identify the Issues

An engineering analysis will be performed on the location by Engineering staff once a requested location has satisfied the above conditions. In this step, information and data will be collected to input during the engineering analysis, such as traffic volumes, speed, and collision history.

Part of this process will be used to determine the extent of traffic calming measures that will be implemented for the project. For example, in some cases providing traffic calming measures on one street may exacerbate the issue on another adjacent street. In this case, the traffic calming solution may require a more comprehensive neighbourhood traffic calming plan or improvements to the major road network.

4. Determine if Project is Warranted

The factors that go into determining whether a project is warranted are complex and difficult to fully quantify, therefore there is no scoring identified to determine whether a project meets the threshold of being warranted. Potential projects will be analyzed based on the following criteria, ranked in no specific order:

- Traffic speeds (85th percentile speed, percentage of speeders)
- Traffic, pedestrian and cyclist volumes
- ICBC collision history
- Impact to emergency service response times
- Implementation cost vs benefit
- Connection to long term plans such as Active Transportation Plan, Cycle Vision Plan, or the Transportation Plan
- Potential for inclusion as part of other DCC or capital projects
- Current and future land use
- Road classification
- Proximity to public transit
- Proximity to schools, parks, and other community amenities

- Proximity to vulnerable populations such as seniors, persons with disabilities, and children
- Existing traffic calming treatments
- Presence of sidewalks or multi-use paths
- Cut-through traffic from a higher classification or capacity roadway
- Sightlines
- Nearby improvements
- Traffic diversion potential.

5. Develop a Plan

Once a traffic calming project is determined to be warranted, the prioritization of traffic calming projects is determined based on the aforementioned criteria.

The highest ranked projects will be provided with a high level (Class D) cost estimate, in some cases identifying multiple solutions. The top ranked projects that are planned for the current or upcoming capital year will have a preliminary design completed.

Study analysis results and the preliminary design may be sent out to affected residents, informing them of the proposed traffic calming measures in their neighbourhood. It should contain some general information on the proposed traffic calming measure, a map of where they will be implemented, the design speed, and basic dimensions.

The communications will encourage residents to provide feedback on the preliminary design and encourage a response if they are in support or opposed to the recommendations. If the public is overwhelmingly opposed to the project, then the traffic calming measure may not be implemented and further public consultation with alternative designs may be initiated.

6. Implement the Plan

Residents will have 45 days after the date on the initial notice to respond to the City's Engineering department with concerns. As long as the area residents aren't significantly opposed to the proposed actions, the final design will be completed and submitted for implementation with the allotted funding. Soon after implementation, City staff will visit the site to evaluate the success of the traffic calming measures.

~~4. Council recognizes the value of traffic calming as a tool to discourage nuisance traffic from local residential roads and therefore enacts this Policy.~~

~~5. Traffic calming measures are appropriate, and will only be considered for installation on roads classified as "Local" with reference to the Official Community Plan, Figure 10.~~

~~6. Traffic calming measures will only be considered where affected property owners are substantially in agreement. The majority of those affected by the improvement must stipulate agreement in writing.~~

~~4. Traffic calming measures will only be considered where traffic volumes and traffic speed exceed that experienced on other comparable roads. Primarily, comparable roads within the neighborhood will be utilized followed by other similar roads in the community.~~

~~5. Traffic calming installations must be approved by Council.~~

_____

Chief Administrative Officer

POLICY DIRECTIVE NO. F-13

SUBJECT: TRAFFIC CALMING

APPROVAL DATE: November 6, 2000 LAST REVIEW DATE:

REFERENCE:

A. PURPOSE

The Traffic Calming Policy has been enacted for the purpose of establishing and maintaining a consistent procedure for traffic calming applications in the City of Chilliwack. Additionally, this document provides some basic information regarding traffic calming solutions and when they can be effectively implemented.

B. DEFINITION

Traffic calming is the implementation of engineering measures to influence driver behaviours on a road to address speeding or safety issues. The goal of traffic calming is to improve safety and the quality of life of a neighbourhood without unduly compromising the accesses to residents' homes and businesses. These measures can come in various forms to suit each unique scenario and problem, including horizontal deflection (curb extensions, traffic circles, etc), signs and signals (right on red restrictions, left turn phasing, etc) and obstructions (raised medians, right-in/right-out islands, etc).

C. OBJECTIVE

All road users are prone to error and that must be accounted for in the City's transportation system. Roads should be safe for all street users including pedestrians, cyclists, and drivers. Traffic calming measures are intended to reduce the number of conflicts or risk of conflicts between users, and when conflicts occur, reduce the harm of the conflict. The objective of this policy is to reduce excessive vehicle speeds and introduce safety buffers through engineering measures.

D. APPLICATION

This policy shall be used for traffic calming requests on City owned streets within the boundaries of the City of Chilliwack. Traffic calming measures shall be consistent with the measures identified below, and where direction is not explicitly given, shall follow best practices such as the Transportation Association of Canada's (TAC) Canadian Guide to Neighbourhood Traffic Calming or the Province of British Columbia's BC Community Road Safety Toolkit.

E. POLICY AND GUIDING PRINCIPLES

The traffic calming policy will be dictated by the following guiding principles which will be applicable to all traffic calming measures. They will ensure that all cases are analyzed based on the same criteria.

1. Identify the Real Problem

It is essential to thoroughly analyze each situation independently and determine the root of the problem. Traffic networks are complex, therefore collecting and carefully reviewing reliable data is essential to have an informed decision-making process. Addressing the immediate concern without this detailed review could exacerbate the original problem.

2. Road Classification

While traffic calming measures will be considered on all roads in the City, the majority of calming installations will take place on local or collector roads to ensure sufficient emergency response times can be maintained Citywide. The City's road classifications can be found on the online GIS map at maps.chilliwack.com. Traffic calming measures should be carefully considered on certain roads, such as high demand truck routes, arterial routes, agricultural routes, transit routes, emergency response routes and major roads leading to fire stations and police stations. The types of traffic calming measures that are recommended for the various classifications of roads can be seen in Table 1 below.

3. Area Wide Traffic Calming Consideration

Traffic calming measures shall not be considered for individual streets until the impact on adjacent streets are first examined. The entire neighbourhood network that is affected by the proposed traffic calming measures should be clearly defined and considered for spillover effects, otherwise the issue may simply shift to other streets. Traffic calming will only be considered on individual locations when a neighborhood-wide traffic calming plan is deemed inappropriate. Additionally, nearby higher classification routes will be analyzed for possible improvements that may alleviate the traffic safety concern.

4. Road Network Connectivity

To maintain road network connectivity, major neighbourhood accesses and egresses should not be fully restricted to ensure minimal impact to residents, emergency vehicles, and other community stakeholders.

5. Pedestrians and Cyclists Considerations

Any improved safety measures should not in any way impede or slow other non-motorized modes of transportation such as cycling and walking. Improvements are to be in accordance with the City's Active Transportation Plan and Cycle Vision Plan.

6. Data Driven Improvements

Most traffic calming policies in other municipalities require a petition and/or a minimum threshold of public support and a clearly defined warrant before a project will be implemented. This policy does not utilize a petition-based process; however, several warrants will be considered as part of the traffic calming study and plan. Although resident support is a factor in determining priorities, this is to reduce the politicization of safety measures and to ensure that resources go to where they are most impactful.

7. Focus on Horizontal Deflection and Obstruction Based Calming

Although vertical deflection such as speed cushions, speed tables, raised crosswalks, and speed humps may be effective in certain circumstances, their positive impacts are limited due to the requirement for sufficient emergency services response times and resident feedback about noise, discomfort, and some drivers travelling more dangerously over speed humps than before. With this in mind, the City is focusing its traffic calming efforts on horizontal deflection, road diets, and obstructions to calm traffic. Current permitted traffic calming tools are listed below. To account for changing best practices, staff may add additional traffic calming tools throughout the life of the policy. Further information about each calming method can be found by clicking on the link attached to each title or by visiting the Pedestrian Safety Guide and Countermeasure Selection System at http://www.pedbikesafe.org/PEDSAFE/countermeasures.cfm

Table 1: Potential Traffic Calming Measures Based on Road Classification

	Traffic Calming Method	Local Roads	Major and Minor Collector Roads	Major and Minor Arterial Roads
Horizontal Deflection	Choker / Chicane – One Lane	✓		
	Choker / Chicane – Two Lane	✓	✓	★
	Curb Extension	✓	✓	★
	Curb Radius Reduction	✓	✓	★
	On Street Parking	✓	✓	★
	Raised Median Island	✓	✓	✓
	Traffic Circle / Roundabout	✓	✓	✓
	Cycle Lane / Multi -Use Pathway	★	✓	✓
	Traffic Button	✓	✓	
	Road Diets	✓	✓	★
	Gateways		★	✓
Vertical Deflection	Speed Humps / Bumps			
	Raised Crosswalk			
	Speed Cushions			
	Raised Intersection			
	Left Turn Calming	★	✓	✓
Signals and Signs	Right Turn on Red Restriction	★	★	★
	Left Turn Phasing	★	★	✓
	Rectangular Rapid Flashing Beacon (RRFB) Crossings	★	✓	✓
	Leading Pedestrian Intervals	★	★	★
	Speed Reader Boards	★	✓	✓
Obstruction	Intersection Channelization	✓	✓	✓
	Right In / Right Out Island	★	✓	✓
	Diagonal Diverter	✓	★	
	Vegetation / Trees	✓	✓	✓
	Bollards	✓	✓	✓

✓ : Typical Practice
★: Implemented Under Special Conditions

F. FINANCE

Projects will be prioritized and implemented based on annual budget allocations; however, additional funding may also come as a part of other capital improvements when there are shared goals. Projects will be prioritized based on the criteria described further in the next section. In addition to individual traffic calming projects, traffic calming measures can be implemented as part of project development standards. When a new development is planned, the developer may be required to provide certain neighbourhood improvements at the discretion of the Director of Engineering.

G. PROCEDURE

The procedure for a traffic calming request can be split into the following phases, further described below:

- Determine if study will be initiated;
- Initiate the study;
- Identify the issues;
- Develop a plan; and,
- Implement the plan.

1. Determine if study will be initiated

Should a resident have traffic calming concerns within their neighbourhood, the requestor shall submit a traffic calming request to the City's Engineering Department by phone, email, or in person. Engineering Staff will follow up with the resident to gather all relevant information and share further information about the City's traffic calming policy.

Many requests stem from individual or unique circumstances. Staff will determine whether additional study is required and respond to the resident accordingly to inform them of how the City will proceed.

2. Initiate a study

Once the request is determined to fall within the conditions of the guiding principles of the policy, an initial traffic calming study will be initiated to determine whether traffic calming may be implemented. Timing of this initial study will depend on staff capacity and the volume of requests.

Traffic volumes and speed data will be collected to warrant further analysis for traffic calming. Although there is no minimum traffic volume required to warrant review, roads with daily traffic volumes of greater than 1000 vehicles per day and 85^{th} percentile speeds that exceed the posted speed by 10km/h or more will have greatest priority.

Note: 85^{th} percentile speed is the speed that 85% of vehicles are travelling at or below and is a standard measure for speeding.

3. Identify the Issues

An engineering analysis will be performed on the location by Engineering staff once a requested location has satisfied the above conditions. In this step, information and data will be collected to input during the engineering analysis, such as traffic volumes, speed, and collision history.

Part of this process will be used to determine the extent of traffic calming measures that will be implemented for the project. For example, in some cases providing traffic calming measures on one street may exacerbate the issue on another adjacent street. In this case, the traffic calming solution may require a more comprehensive neighbourhood traffic calming plan or improvements to the major road network.

4. Determine if Project is Warranted

The factors that go into determining whether a project is warranted are complex and difficult to fully quantify, therefore there is no scoring identified to determine whether a project meets the threshold of being warranted. Potential projects will be analyzed based on the following criteria, ranked in no specific order:

- Traffic speeds (85^{th} percentile speed, percentage of speeders);
- Traffic, pedestrian and cyclist volumes;
- ICBC collision history;
- Impact to emergency service response times;
- Implementation cost vs benefit;
- Connection to long term plans such as Active Transportation Plan, Cycle Vision Plan, or the Transportation Plan;
- Potential for inclusion as part of other DCC or capital projects;
- Current and future land use;
- Road classification;
- Proximity to public transit;
- Proximity to schools, parks, and other community amenities;
- Proximity to vulnerable populations such as seniors, persons with disabilities, and children;
- Existing traffic calming treatments
- Presence of sidewalks or multi-use paths
- Cut-through traffic from a higher classification or capacity roadway;
- Sightlines;
- Nearby improvements; and,
- Traffic diversion potential.

5. Develop a Plan

Once a traffic calming project is determined to be warranted, the prioritization of traffic calming projects is determined based on the aforementioned criteria.

The highest ranked projects will be provided with a high level (Class D) cost estimate, in some cases identifying multiple solutions. The top ranked projects that are planned for the current or upcoming capital year will have a preliminary design completed.

Study analysis results and the preliminary design may be sent out to affected residents, informing them of the proposed traffic calming measures in their neighbourhood. It should contain some general information on the proposed traffic calming measure, a map of where they will be implemented, the design speed, and basic dimensions.

The communications will encourage residents to provide feedback on the preliminary design and encourage a response if they are in support or opposed to the recommendations. If the public is overwhelmingly opposed to the project, then the traffic calming measure may not be implemented and further public consultation with alternative designs may be initiated.

6. Implement the Plan

Residents will have 45 days after the date on the initial notice to respond to the City's Engineering department with concerns. As long as the area residents aren't significantly opposed to the proposed actions, the final design will be completed and submitted for implementation with the allotted funding. Soon after implementation, City staff will visit the site to evaluate the success of the traffic calming measures.

_____
Chief Administrative Officer