



Town of Halton Hills

Traffic Calming Implementation Protocol

2022

PROCESS FOR INSTALLATION OF TRAFFIC CALMING DEVICES

The Process for Installation of Traffic Calming Devices has been prepared to provide an objective procedure for staff to evaluate traffic calming requests. Furthermore, the process focus is to establish a transparent and efficient planning process for the installation of traffic calming devices. The Process of Installation of Traffic Calming Devices is illustrated as Appendix A, and is described in the following sections. Traffic Calming Measures are illustrated in Appendix B.

Identify Speeding Issue(s)

Consideration for a speed review process can be initiated in a number of ways. A proponent (resident or community association) may submit a concern or staff may identify issues regarding speeding, aggressive driving, cut-through traffic, increased vehicle collisions or pedestrian safety occurring within a neighbourhood. Some roads such as courts or crescents will not be considered for intrusive traffic calming measures, as there is no cut-through traffic.

Initialize Speeding Verification and Education

The proponent(s) will be informed about the initial process that involves public engagement and education of the community. To address initial speeding concerns, educational tools such as the Radar Message Board (RMB) program will be used and the public will be asked to participate in the Community Road Watch Program, a neighbourhood monitoring program that enables residents to identify speeding or aggressive driving. The Community Road Watch Program and traffic complaint website are neighbourhood safety tools provided by the Halton Regional Police Service (HRPS) for the public. They enable the HRPS to monitor, evaluate and enforce the traffic related issues within neighbourhoods based on the public concerns.

To ensure adequate time is allocated to utilize the education tools to validate the speeding concerns, this step in the process will be undertaken for a minimum period of six months. The residents of the affected neighbourhood will be asked to observe the driver's behaviour based on the operating speeds displayed by the RMB. This step in the process will ensure that the residents will have a chance to initially assess the problem based on their own observations of the RMB. Staff may install an individual sign or pavement marking to help educate the public.

To ensure a fair and timely response, the speeding issue(s) review will be added to the overall work plan and prioritization list that includes other locations for traffic calming requests identified by the public.

Should the initial traffic calming measures confirm that a speeding issue does not exist; staff will contact the proponent to advise them of the results and confirm that no further action will be taken. This will be reported back to Council to conclude the process.

Complete Screening Process

Should the review indicate that a speeding issue does exist; the road will be evaluated based on the Screening Process criterion to determine whether traffic calming measures are appropriate and the HRPS will be requested to undertake speed enforcement.

As part of the Screening Process, staff will review the historical data for the area including the number and frequency of previous traffic complaints and any improvements completed in the study area over the past five years. Staff may initiate the collection of new traffic data to be used for the Screening Process criterion, as part of the review process.

Non-Intrusive Traffic Calming Screening Process

For a Local or Collector classified street to be considered for implementation of non-intrusive traffic calming measures (pavement markings, signage and “Flexible Bollards”) Condition 1 (Speed) of the Non-Intrusive Traffic Calming Screening Process should be fully satisfied.

The Non-Intrusive Traffic Calming Screening Process criterion is indicated in Table A.

Table A: Non-Intrusive Traffic Calming Screening Process		
Road Classification	Condition 1 (Speed)	
	Posted Speed Limit vs. Operating Speed (85th percentile in km/h)	
Local Street	40	50
	>51	>62
	Schools, Retirement Centres and Major Parks	
	47	57
Collector Street	>51	>62
	Schools, Retirement Centres and Major Parks	
	47	57

If the request does not satisfy the Non-Intrusive Traffic Screening Process criterion, staff will advise the proponent that no traffic calming measures will be considered at this location. Should the request satisfy the Non-Intrusive Screening Process criterion, the neighbourhood will be evaluated based on a ranking system.

Intrusive Traffic Calming Screening Process

For a Local or Collector classified street to be considered for implementation of intrusive traffic calming measures, both Conditions 1 and 2 of the Intrusive Traffic Calming Screening Process are required to be fully satisfied.

The Intrusive Traffic Calming Screening Process criterion is indicated in Table B.

Table B: Intrusive Traffic Calming Screening Process				
Road Classification	Condition 1	Condition 2 (Speed & Volume)		
	Through Traffic	Posted Speed Limit vs. Operating Speed (85th percentile in km/h)		
		40	50	60
Local Street	Infiltrating Traffic exceeds 30%	>54	>65	>79
		Schools, Retirement Centres and Major Parks		
		50	60	70
Collector Street	Infiltrating Traffic exceeds 30%	>54	>65	>79
		Schools, Retirement Centres and Major Parks		
		50	60	70

If the request does not satisfy the Intrusive Screening Process criterion, staff will advise the proponent that no intrusive traffic calming measures will be considered at this location and report to Council to conclude the process. Should the request satisfy the Intrusive Screening Process criterion, the neighbourhood will be evaluated based on a ranking system.

Criteria for the Placement of Speed Humps

Speed humps should be placed **on level roads** as a change in incline can make the hump higher, less safe to negotiate, impede water drainage and winter road maintenance. Other considerations should include placement relative to intersections, horizontal curves, driveways, maintenance holes, illumination, and curbs.

These types of vertical deflection traffic calming measures shall not be utilized **on arterial roads, or on any street where it is easy for a car to evade the hump by driving on a shoulder.**

Rank and Prioritize Neighbourhood Streets

The neighbourhood is prioritized through the ranking system and compared to other requests for traffic calming analysis. This method allows staff to determine the highest ranked location for traffic calming measures in the community and the type of improvements required.

The Ranking System for Non-Intrusive Traffic Calming Projects is indicated in Table C.

Table C: Ranking System for Non-intrusive Traffic Calming Projects			
Ranking Max. 100 Points	Speed (0 to 50 points)	Local Street 5 points for each 2 km/h that the 85th percentile speed is above the Condition 1 threshold for speed of traffic.	Collector Street 3 points for each 2km/h that the 85th percentile speed is above the Condition 1 threshold for speed of traffic.
	Collisions (0 to 30 points)	10 points for 1 preventable collision as per police record in the past 3 years; or 30 points for 2 or more preventable collisions recorded in the past 3 years.	
	Pedestrian Traffic Generators (0 to 20 points)	5 points for each pedestrian generator (i.e., school, park, retirement home, recreation centre, etc.)	
Note: Preventable collisions are those that are considered preventable through the use of traffic calming measures.			

The Ranking System for Intrusive Traffic Calming Projects is indicated in Table D.

Table D: Ranking System for Intrusive Traffic Calming Projects			
Ranking Max. 100 Points	Speed (0 to 30 points)	Local Street 5 points for each 2 km/h that the 85th percentile speed is above the Condition 2, Warrant 1 threshold for speed of traffic.	Collector Street 3 points for each 2km/h that the 85th percentile speed is above the Condition 2, Warrant 1 threshold for speed of traffic.
	Volume (0 to 30 points)	Local Street 1 point for every 100 vehicles as per recorded A.A.D.T. above the Condition 2, Warrant 1 threshold for volume of traffic.	Collector Street 1 point for every 200 vehicles as per recorded A.A.D.T. above the Condition 2, Warrant 1 threshold for volume of traffic.
	Collisions (0 to 30 points)	10 points for 1 preventable collision as per police record in the past 3 years; or 30 points for 2 or more preventable collisions recorded in the past 3 years.	
	Pedestrian Traffic Generators (0 to 10 points)	5 points for each pedestrian generator (i.e. school, park, retirement home, recreation centre, etc.)	
Note: Preventable collisions are those that are considered preventable through the use of traffic calming measures.			

Develop a Traffic Calming Plan

To develop a Traffic Calming Plan (TCP), staff will utilize a neighbourhood traffic calming approach to engage the Study Area residents. The neighbourhood traffic calming approach will review multiple roads to determine which traffic calming measures are appropriate within the Study Area. For the consideration of non-intrusive traffic calming measures only one road will be evaluated. The consideration of intrusive traffic calming measures, in most cases, will include a review of the neighbourhood in a holistic way with special considerations for parks, schools, senior centres, or other community facilities.

Staff will prepare the TCP to ensure that our overall traffic calming objectives are accomplished. Every road will be evaluated on its own merits, based on the Town's traffic information. Depending on the severity of the speeding and/or cut through traffic, staff may consider installation of non-intrusive or intrusive traffic calming measures.

If the speeding issue meets the Non-Intrusive Traffic Calming Screening Process criterion, staff will consider traffic calming measures, such as pavement markings, signs, "Flexible Bollards", Vehicle Activated Traffic Calming Signs (VATCS) and permanent Radar Message Board signs (RMBs). If the speeding issue meets the Intrusive Traffic Calming Screening Process criterion, staff will consider traffic calming measures, such as speed humps, raised crosswalks/intersections, curb extensions, chicanes, traffic circles, roundabouts, centre islands, media barriers, and full and half street road closures.

The preparation of the TCP will ensure that all relevant traffic information is evaluated, and a variety of options are reviewed and considered. Adequate road illumination and pedestrian facilities will be evaluated and upgraded if required.

Additional Requirements for Intrusive Traffic Calming Plans

Emergency Services will be consulted to review the proposed traffic calming measures. This step is important to minimize the delay time that may affect emergency response times. The study area residents will be informed about the next steps through hand-delivered notices. The notices will include information about the Public Information Centre (PIC). Residents will be able to evaluate the proposed TCP, engage with staff, and provide their comments. The PIC will allow residents to present their perspectives and have meaningful discussions about their needs within the neighbourhood. In addition, staff will utilize the "Let's Talk Halton Hills" on-line platform to engage residents, receive feedback, and provide updates to the public on the implementation plan.

Staff will finalize the proposed TCP based on feedback from the public. A report to Council will be prepared that will outline the TCP and request for Council endorsement.

Implement TCP through Capital Program

Following Council's approval, staff will identify the location for the implementation of the traffic calming measures in the Capital Budget and notify local residents.

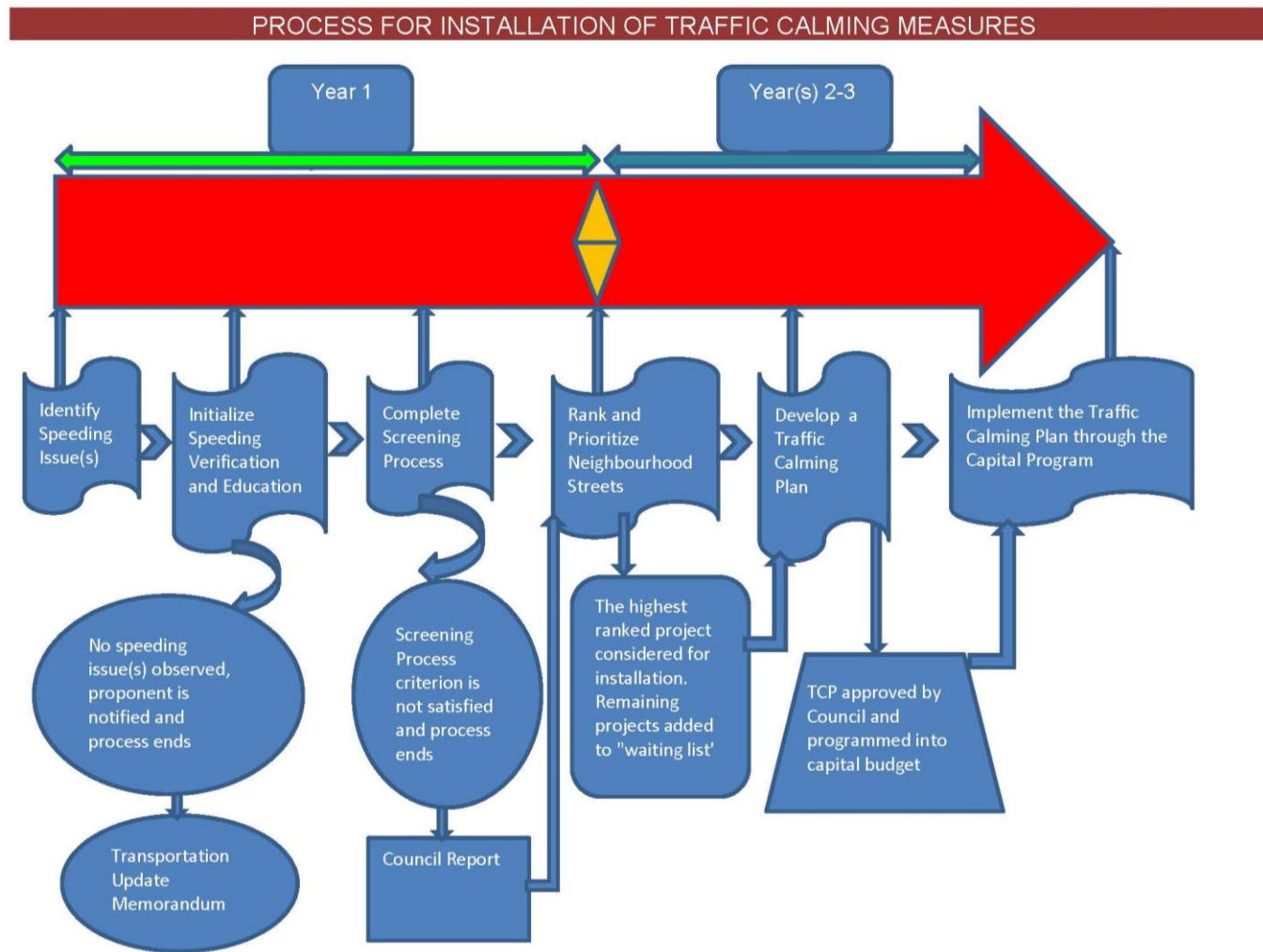
After the installation of traffic calming measures, staff will carry out an operational review to assess the effectiveness of the measures and traffic impacts on adjacent neighbourhoods.

It is anticipated that the overall process from the initial screening process to the final construction of the neighbourhood traffic calming project may take up to 3 years to complete depending on the budget pressures.

Monitoring, Evaluation and Follow-up

During the year following the installation, the Town will monitor the effectiveness of the traffic calming measures installed as part of the TCP. Staff will carry out a review through conducting specific traffic studies and preparing an information report to Council. Staff will comment on before and after traffic conditions, any resulting impacts and future recommendations.

Appendix A











Appendix B

Town of Halton Hills Guide to Traffic Calming Measures



Non-Intrusive Traffic Calming Measures Available for Consideration

Measure	Description	Illustration
Flexible Bollards	Rugged traffic posts, designed to bend without braking. Bendable bollards spring forward and back to prevent bollard and vehicle damage. They reduce road width discouraging aggressive driving.	
Permanent Radar Message Board (RMB)	Electronic message sign that displays operating speeds of approaching vehicles. The RMB alerts motorists about their operating speeds and help to slow down vehicular traffic.	
Vehicle Activated Traffic Calming Signs (VATCS)	Vehicle Activated Traffic Calming Signs (VATCS) are electronic signs displaying the maximum speed limit, flashing amber beacons and the "Slow Down" message. The VATCS flash when motorists exceed the maximum posted speed limit.	
Designated Lane Pavement Markings (Centre Lines, Edge Lines, Bike Lanes)	Non-intrusive measures that reduce the width of the travelling lane and discourage aggressive driving.	
"SLOW" Markings	Non-intrusive traffic calming measure that discourages speeding through a painted "SLOW" marking within the travelling lane.	

Measure	Description	Illustration
Transverse Markings	Non-intrusive measure that visually reduces the road width and make it uncomfortable for motorists to carry higher speeds.	
Watch for Children Sign	Warns motorists of the presence of children on or near the road.	
Playground Ahead Sign	Provides advance warning of a locally designated playground that is located adjacent to a downstream section of road.	

Intrusive Traffic Calming Measures Available for Consideration (Source: Canadian Guide to Traffic Calming, Second Edition, February 2018)



3.2 VERTICAL DEFLECTION

This section describes traffic calming measures which cause a vertical upward movement of the vehicle. This movement generally results in lowered vehicle speeds because motorists slow to avoid unpleasant sensations when traversing the traffic calming measure. Use of vertical deflection measures can also have the secondary effects of reducing traffic volumes, reducing conflicts, and enhancing the neighbourhood environment.

3.2.1 RAISED CROSSWALK



Source: City of Ottawa

Description and Purpose:

A raised crosswalk is a marked pedestrian crosswalk at an intersection or mid-block location constructed at a higher elevation than the adjacent roadway.

The purpose of a raised crosswalk is to reduce vehicle speeds, improve pedestrian visibility, and reduce pedestrian–vehicle conflicts.

Raised crosswalk effects/characteristics include:

- ▶ The vertical movement of the vehicle producing an uncomfortable sensation for vehicle occupants travelling at higher speeds
- ▶ The raised surface improving visual identification of crosswalk areas and emphasizing pedestrian priority
- ▶ The roadway approaches to and departures from the crosswalk are appropriately ramped in consideration of vehicle types and desired speed
- ▶ Installation of WA-50 Speed Hump sign is considered mandatory
- ▶ The use of textured materials is possible

Design Details: Chapter 4, Section 4.2.1

3.2.3 SPEED CUSHION



Source: City of Ottawa

Description and Purpose:

A raised area on a road, similar to a speed hump, but does not cover the entire width of the road. The width is designed to allow a large vehicle, such as a bus, to “straddle” the cushion, while light vehicles will have at least one side of the vehicle deflected upward. Speed cushions are intended to produce sufficient discomfort to limit passenger vehicle travel speeds yet allow the driver to maintain vehicle control, while allowing larger vehicles such as buses and emergency vehicles to pass without difficulty.

With speed cushions:

- ▶ The vertical deflection of the passenger vehicle produces an uncomfortable sensation for vehicle occupants travelling at speeds higher than the design speed
- ▶ Larger vehicles (transit, emergency vehicles) are minimally affected
- ▶ The design speed is determined by the dimensions of the speed hump, and the spacing between speed humps
- ▶ Sufficient pavement width should be provided on the curb side to accommodate bicycles
- ▶ Installation of WA-50 Speed Hump sign is considered mandatory

Design Details: Chapter 4, Section 4.2.3

3.2.4 SPEED HUMP / TABLE



Source: City of Ottawa

Description and Purpose:

A speed hump is a raised area of a roadway, which causes the vertical upward movement of a traversing vehicle. The purpose of a speed hump is to cause discomfort for drivers travelling at higher speeds and to reduce vehicle speeds.

A speed table is an elongated raised speed hump with a flat-topped section that is long enough to raise the entire wheelbase of a vehicle. They may be constructed with brick or other textured materials on the flat section.

With speed humps/tables:

- ▶ The vertical deflection of the vehicle produces an uncomfortable sensation for vehicle occupants travelling at speeds higher than the design speed
- ▶ The design speed is determined by the dimensions of the hump, and the spacing between humps
- ▶ The hump extends across the roadway, with gaps for drainage at the curbs
- ▶ Consideration should be given for maintaining hump across the width of an adjacent bicycle lane or a physical separation (median, delineator posts) could be provided to 'protect' the bicycle lane from motorists trying to avoid the hump
- ▶ Installation of WA-50 Speed Hump sign is considered mandatory

Design Details: Chapter 4, Section 4.2.4

3.3 HORIZONTAL DEFLECTION

This section describes traffic calming measures which cause a lateral shift in the travel pattern of vehicles. These measures discourage short-cutting or through traffic to varying extents; measures which obstruct access achieve greater reductions in traffic volumes. Some measures may also reduce vehicle speeds, reduce conflicts or enhance the neighbourhood environment.

3.3.1 CHICANE (ONE-LANE / TWO-LANE)



Description and Purpose:

A chicane is a series of curb extensions on alternating sides of a roadway, which narrow the roadway and require drivers to steer from one side of the roadway to the other to travel through the chicane. Multiple series of curb extensions can be used.

The purpose of this measure is to discourage shortcutting or through traffic and reduce overall speeds by forcing the lateral shifting of vehicles travelling through the chicane.

With a chicane, through traffic is further discouraged when a chicane on a two-way roadway incorporates a narrowing to less than the width of two vehicles (one-lane chicane), so that when vehicles travelling in opposite directions meet at the chicane, one vehicle must yield.

Design Details: Chapter 4, Section 4.3.1

3.4 ROADWAY NARROWING

This section describes traffic calming measures which cause a narrowing of the road. These measures are intended to increase drivers' feeling of "confinement", resulting in reduced speeds. Some measures may also enhance the neighbourhood environment and re-allocate roadway space to other road users.

3.4.1 CURB EXTENSION / NECKDOWN / CHOKER



Source: Watt Consulting Group

Description and Purpose:

A curb extension (also known as neckdown, choker, curb bulb, or bulb-out) is a horizontal intrusion of the curb into the roadway resulting in a narrow section of roadway. The curb is extended on one or both sides of the roadway to reduce its width to as a little as 6.0 m for two-lane, two-way traffic. In urban environments, it is possible to implement curb extensions by removing existing parking spaces.

The purpose of a curb extension is to reduce vehicle speeds, reduce crossing distance for pedestrians, increase visibility of pedestrians, and prevent parking close to an intersection.

Design Details: Chapter 4, Section 4.4.1

3.4.4 RAISED MEDIAN ISLAND



Source: Watt Consulting Group

Description and Purpose:

A raised median island is an elevated median constructed on the centerline of a two-way roadway to reduce the overall width of the adjacent travel lanes.

The purpose of a raised median island is to reduce vehicle speeds and to reduce pedestrian-vehicle conflicts.

Design Details: Chapter 4, Section 4.4.3

Source:

TAC/ITE Canadian Guide to Neighbourhood Traffic Calming, February 2018

