CORPORATION OF THE TOWNSHIP OF ESQUIMALT

COUNCIL POLICY

TITLE: **The Township Guide to Traffic Calming**	**NO. E&PW-01**

POLICY:

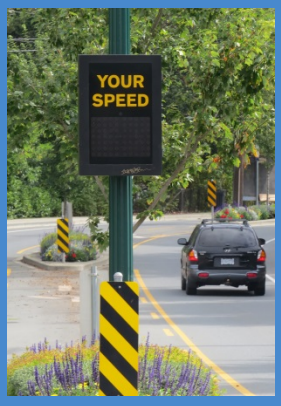
The attached document, "The Township Guide to Traffic Calming" was approved by Council at the October 6, 2014 meeting, Council rescinded Council Policy PLAN-24 "Neighbourhood Transportation Management Program". The Revised Policy was approved by Council at the October 2, 2017 meeting.

PROCEDURE:

See attached Guide.

Township of
ESQUIMALT

Engineering and Public Works



The Township Guide to Traffic Calming

October 2017

INTRODUCTION

What is traffic calming? It is the use of different methods and structures to influence drivers to keep their travel speed to within the posted speed limit. This philosophy uses different aspects such as education, enforcement and structures to achieve this goal.

This guide describes the Township of Esquimalt's approach for neighbourhood traffic calming, as well as funding and implementation policies.

ROAD TYPES

In the Official Community Plan (OCP) under section 4, A Connected Community – Transportation, the different road classifications are defined (see Appendix A). The Township uses a hierarchical system to classify streets that are intended to reflect their purpose. The purpose for the streets is to facilitate the efficient movement of vehicles, bikes and people within the Township.

The classifications currently used within the Township are:

1. **Major Roads**

   These roads facilitate the movement of large volumes of traffic both within the Township and to the surrounding municipalities.

2. **Residential Collector Road**

   These roads function as gatherers and dispersers of traffic from neighbourhoods. They deliver vehicles to and from local roads to major roads.

3. **Residential Roads**

   These roads form the collection system in the neighbourhoods and link people's homes to the residential collectors and major roads.

4. **Laneways**

   These roads are normally narrow with a width for only one and a half vehicles across. They provide direct access to properties.

TRAFFIC CALMING CONSIDERATIONS

Typically, as a vehicle moves through the transportation system, it will experience heavier traffic volumes and higher speed limits as it moves from laneways to major roads.

An important thing to remember is that the various types of traffic calming measures that can be applied to the street effect adjacent roads and the serviceability of the subject road. The key effects are:

- *Increase in shortcutting vehicles:* The inconvenience and discomfort of the traffic calming features on major roads and residential collector roads may encourage drivers to use alternatives and displace traffic to residential roads.

- *Reduced road capacity:* Vehicles must slow to 30 to 40 km/h for traffic calming measures which significantly reduces the volume of cars that can travel along the road during a given time period. This would be very problematic for higher volume collector and major roads.

- *Delay in emergency services response times:* major and residential collector roads are important routes for emergency services. Every measure increases emergency services response time and makes it difficult to achieve the response times required of them.

- *Impact on transit services:* Transit vehicles may travel on the same route many times a day. If a transit route has been traffic-calmed using vertical deflection devices, continually traversing these measures will cause increased wear to the transit vehicles and discomfort to the driver on a recurring basis. Also, passengers may feel discomfort and have an increased risk of falling.

These factors will be considered when the Traffic Calming Plan is developed.

SPEED LIMITS

The regulated travel speed on the various roads is set by one of two mechanisms. The first mechanism is the Motor Vehicle Act (MVA) with the second mechanism being the Streets and Traffic Bylaw (STB). In the STB, the rate of speed that a motor vehicle may operate shall not exceed fifty kilometres per hour except where this requirement has been varied by the MVA or the STB. There are four speed limits that apply in the Township (see Appendix B for listing of streets).They are:

- 25 km/hr
- 30 km/hr
- 40 km/hr
- 50 km/hr

EDUCATION AND ENFORCEMENT

One of the most important ways to create streets where speed limits are meaningful is the education of the users. The Township in partnership with the Victoria Police Department (VicPD) utilizes several ways to help educate and enforce the speed limits.

Education comes in several forms. It can be achieved by the use of portable speed reader display, Neighbourhood Speed Watch Program and police enforcement (both to inform and enforce). It is hoped that by these methods, the Township's drivers become aware of the speed limits of the various roads and the dangers of excessive speed and careless driving. An understanding of the traffic laws and the dangers of excessive speed is the basis for reducing speeding. The other tool for creating a respect and understanding of traffic laws is enforcement. The fear of consequences can create a deterrent to speeding.

In the Township, the VicPD members and the Integrated Road Safety Unit primarily have the responsibility of the enforcement of traffic laws and speed limits. Ideally continuous enforcement of the traffic laws would be nice; but it is also an unrealistic expectation. Police resources are deployed to known locations of high speeding or collisions to help drivers gain an understanding of their environment and to operate safely in it.

PHYSICAL CHANGES

There are a number of traffic calming options available in the Township that can be installed which aid in achieving the desired traffic calming result. These options are either vertical or horizontal deflections in the road.

- Vertical deflections introduce a change in the height of the road surface. These deflections generally are more successful in reducing speeds.
- Horizontal deflections introduce a change in the width of the road surface. These deflections are an effective way to aid in the reduction of speeds that also improve pedestrian safety and crossing ability as well as enhance landscaping and aesthetic appeal.

There are many types of traffic calming structures. At this time, the Township will consider the following traffic calming structures on the Township's roads:

- Raised crosswalk
- Chicanes
- Curb extensions
- Raised Islands
- Road closure
- Speed cushions
- Speed humps
- Speed tables

In Appendix C, pictures of these options along with their positive and negative aspects are available for review.

One thing to remember is that the road classification will play a part of determining which traffic calming structure is used. For example, it is very unlikely that speed bumps would be introduced on a major road.

TRAFFIC CALMING IMPLIMENTATION PROCESS

The Township has established the following traffic calming implementation process. This process enables the residents to actively participate in the five main steps which are:

1. Initial Evaluation
2. Detailed Evaluation
3. Funding Source
4. Installation
5. Follow up

See Appendix D for the flow chart of the process

Initial Evaluation

This step begins the process. It is here that the Engineering Department will receive a request for traffic calming from an individual or a group of concerned residents. The request needs to include the following information:

- Identification of the problem (speeding, traffic volume)
- Identify a desired result (reduced speed, reduced traffic volume)
- Definition of the problem area
- Times and days that problem is most significant
- Contact information for an individual to be the contact person between the Township and the concerned party

The Engineering Department then reviews this information. This review will first look at road classification and whether or not the desired result meets with the requirements of the classification. With the information provided, a petition will be created by the Township. The purpose of the petition will be to determine if there is adequate neighbourhood support for the traffic calming request.

The petition will identify the problem, the problem area, along with how the possible solution will be paid for. This petition will then be discussed with the contact person. Then the petition will be sent by the Township to the defined problem area for review and response.

In order for the request to move on to the next step, the neighborhood needs to show support for the initiative. A minimum of 90% of the mailed out petitions need to be returned to the Township. At least 80% of the returned petitions need to be in support of the initiative for the project to continue. The Engineering Department will review the information to determine if the thresholds have been met. If the petition indicates that there is insufficient support for the traffic calming request, the Engineering Department will notify the contact person and inform them of the results and subsequent decision not to continue the request forward in the process.

VicPD will also be notified of the request. This will provide the opportunity for the police to carry out educational or enforcement activities to assist drivers in correcting their driving habits.

Detail Evaluation

Once it has been determined that there is neighbourhood support for the idea of traffic calming, the next step will be a detailed evaluation of the issue. This will involve deployment of resources to monitor the volume and speed of the traffic on the road(s) that are of concern. Data collection will take a minimum of a week or more in order to clearly define the traffic's behavior and flow. This data will also be shared with the police in order to assist them in their educational or enforcement activities.

When the monitoring phase of the evaluation is complete, the collected data will be compiled and reviewed. The review process will look at the total daily traffic volume and the daily traffic speed.

- ***Total daily traffic volume***: The total number of vehicles that pass a particular location in an average day.
- ***Daily traffic speed***: The speed of the vehicles passing a particular location in an average day. Speed will be measured by using the "85^{th} percentile" concept. This is the speed that 85 percent of the vehicles that travel at the speed limit or below it.

As part of the review process, the road classification (see Appendix A for road classifications) will also be reviewed. If the road is classified as a residential road or lane, it will be determined if the road segment is being utilized as a cut through route.

Cut through routes occur due to traffic congestion and drivers attempting to avoid these areas by utilizing residential roads. These residential roads then begin to function as residential collector ~~roatd~~roads during specific times (i.e. morning/afternoon rush hours).

In order for a street to have traffic calming measures implemented on it, the following criteria must be met:

- The road carries a minimum daily traffic volume 500 vehicles per day
- The 85th percentile speed of the daily traffic is 10 km/h higher than the existing speed limit

If it has been determined that the road does not meet both thresholds identified above, the contact person will be informed in writing of the road's failure to meet the criteria and that the process will not be carrying forward. An update of the process will also be sent to the residents that were originally requested to participate in the petition.

If the thresholds values have been achieved, Engineering will begin the design and cost estimating for the proposed work. The design phase will determine which calming measure is best suited for the road. This work will be carried out by either Engineering or a consultant depending on the nature of the design. A part of the design process will also be to determine the cost of the proposed design.

Once a design has been finalized, the design will be discussed with the contact person and then be sent out to the affected area asking for comments. This mail out will include the cost of the proposed option and how it will be funded.

Funding Source

With the design finalized, the next step will be acquisition of funding for the implementation of the design. Funding will come from two sources: the Capital Project Funding Reserve (CPRF) or a Local Area Service Improvement Reserve (LAS). The roads classification and whether or not a road is defined as a cut through route will determine which funding source will be utilized. It should be noted that each funding source has its own requirements and timelines for funding to be obtained.

Capital Projects Reserve Fund (CPRF)

Roads that are classified as major roads or residential collector roads are eligible for funding from the CPRF. The nature of these roads is that they serve not only the local neighbourhood but act as fundamental components in the vehicular movement in and out of the Township.

The funding process for CPRF will involve the following steps:

1. Capital project funding request will be completed as part of the next year's budget process.
2. The funding request will be measured against other projects that are requesting funding and debated by Council.
3. If the funding request is approved, a capital project will be added to that year's capital program and construction will occur in that year.
4. If the funding request is not approved, the funding request will be added to the following year's budget process after discussions are held with the petitioner(s)

This process will generally take a year to complete as budgetary discussions only occur in the first quarter of the budget year. The funding for this type of project is provided through taxation.

Local Area Service Funding (LAS)

Roads that are classified as residential roads or lanes are eligible for funding from the Local Improvement Reserve only. These are a road(s) that serve a specific group of residents.

The funding process for the LAS will involve the following steps:

1. A bylaw will be developed that describes the service, defines the boundaries of the service and identifies the method of cost recovery for the service.
2. An information package on the issue and the bylaw requirements will then be sent to the area defined by the LAS bylaw for consideration by the residents.
3. The residents will indicate to the Township their approval or disapproval of the project by written response.
4. The LAS can come about in two ways. The first way is a resident driven initiative. The second way is a Council driven initiative.
5. For a resident driven initiative LAS to be successful two conditions must be met. If only one of the conditions is met, the petition will be deemed to have failed. This failure will terminate the traffic calming request.
    I. The two conditions that need to be meet if the initiative is resident drive are:
        i. That the petition must be signed by the owners of at least 50% of the parcels that would be subject to the local service tax.
        ii. That the persons signing must be the owners of the parcels that in total represent at least 50% of the assessed value of the land and improvements that would be subject to the local services tax.
6. For a Council drive initiative, the following requirements will take place:
    I. The Township gives notice of its intention to process with the initiative as a LAS to the area of concern.
    II. The notification would detail the area impacted by the LAS, the scope of work, the cost of the work and how the cost recovery would be achieved
    III. Owners of parcels would then have 30 days to respond back to the Township with a petition against the initiative.
    IV. If a petition is not filed, the initiative will be deemed to have succeeded.
    V. If a petition is filed, it will be compared to the two tests laid out in Point 5. The petition must pass both of these tests in order to halt the initiative.
    VI. If only one of the tests is met, the petition will have been to fail and the initiative will proceed.
7. Once the LAS is accepted the project will then proceed to construction.

The funding for a LAS project is taken from the Local Improvement Reserve. Funding from this reserve is available once the LAS requirements have been met.

Cut Through Roads

As cut through roads are classified as residential roads, the funding source should be LAS. However these roads are acting like residential collectors for periods of time. With this being the case, the funding source would be the CPRF.

Once a road is classified as a cut through road, the contact person will be notified of this change in classification. Utilizing the contact person and mail outs, Engineering will request information back from the affected area to determine which funding mechanism is the preference of the area. Once a decision is made to the funding source, the proposed traffic calming measure will meet the requirements of the chosen process.

Installation

Once a funding source has been secured, the project moves into the construction phase. This phase has two distinct components. They are temporary and permanent construction.

The temporary construction will see the traffic calming concept constructed of temporary materials to mimic the finalized traffic calming concept. This temporary measure will be utilized to collect data to determine if the proposed traffic calming concept makes an impact on the speed and volume of the traffic. This phase may last three to six months. The data collected will be processed and compared to earlier data to determine if the proposed traffic calming concept has created the anticipated change in the rate of speed of the traffic.

If data shows that the traffic calming concept does not meet the desired results, the project moves back to the design stage to look at an alternative solution that will meet the desired results. The traffic calming concept will then be redesigned. This redesign may result in additional costs that are beyond the original cost estimate. Depending on the amount of funding required it may be necessary to repeat the funding phase.

If the temporary installation proves to be successful, the traffic calming concept is moved forward into permanent construction. It is here that the design is constructed. The time to construct the structure will depend on the design and time of year.

Follow Up

Once the project has been constructed, the road section will be monitored for a period. The purpose of this phase is to track differences the project has made to speed and Volume levels.

CONTACT US

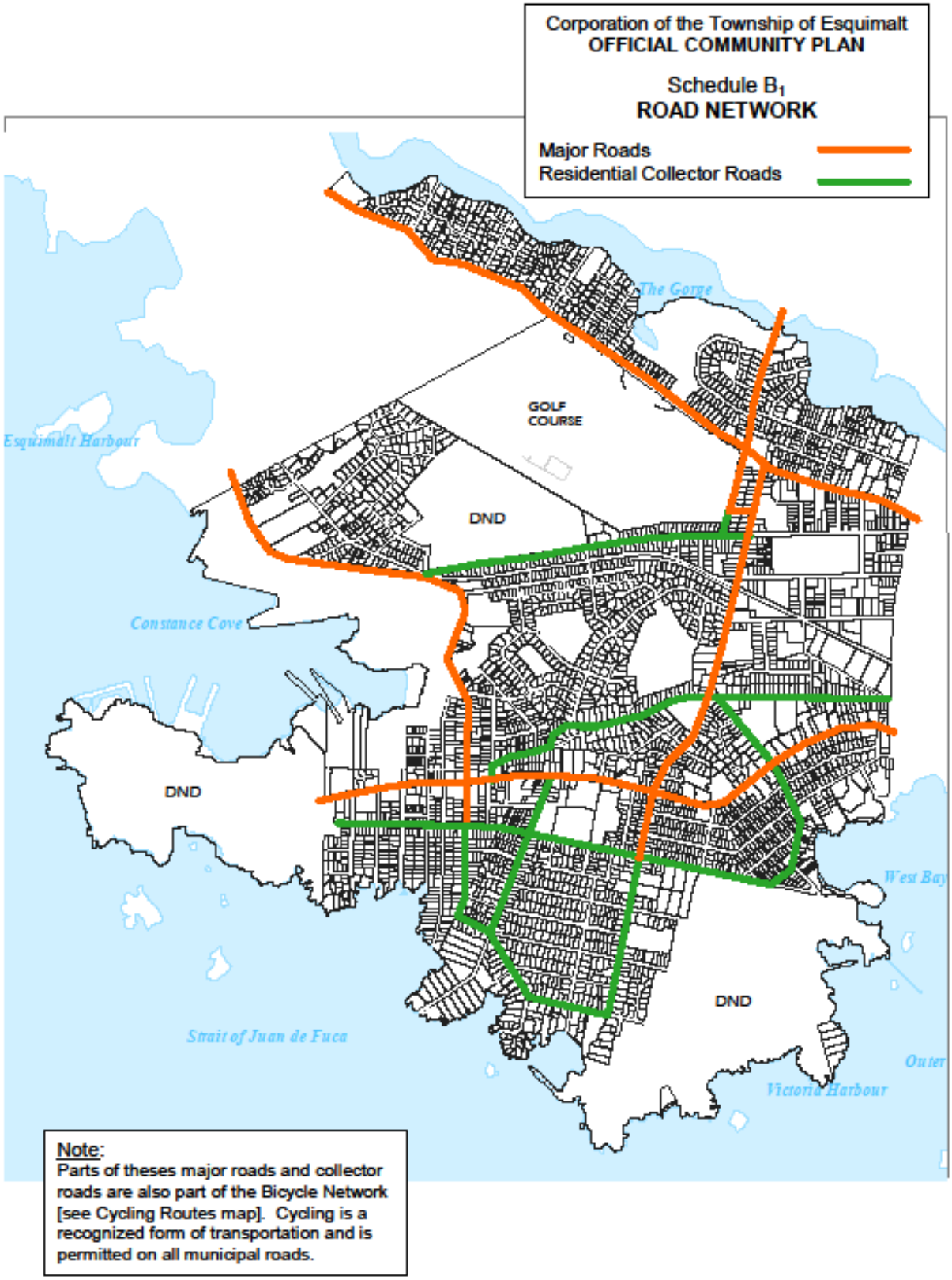
Engineering and Public Works

Email: engineering@esquimalt.ca
Phone: 250-414-7108
Fax: 250-414-7160
Mail: Township of Esquimalt – Engineering & Public Works
1229 Esquimalt Road. 3rd Floor
Victoria, BC V9A 3P1

VicPd West Division

Email: Info@vicpd.ca
Phone: 250-995-7654
Fax: 250-384-1362
Mail: Victoria Police (West Division)
Public Safety Building
500 Park Place
Esquimalt, BC V9A 6Z9

APPENDIX A
OFFICIAL COMMUNITY PLAN – SCHEDULE B1


Corporation of the Township of Esquimalt
OFFICIAL COMMUNITY PLAN
Schedule B1
ROAD NETWORK
Major Roads
Residential Collector Roads
The Gorge
GOLF COURSE
Esquimalt Harbour
DND
Constance Cove
DND
West Bay
DND
Strait of Juan de Fuca
Outer
Victoria Harbour
Note:
Parts of theses major roads and collector roads are also part of the Bicycle Network [see Cycling Routes map]. Cycling is a recognized form of transportation and is permitted on all municipal roads.

APPENDIX B
SPEED LIMITS

Speed Limits

(1) The rate of speed at which a person may drive or operate a motor-vehicle upon a highway, roadway or lane in the Township of Esquimalt shall not exceed fifty (50) kilometres per hour, save in such portions of the Municipality in respect of which lesser maximum speeds are provided by this Bylaw or the *"Motor Vehicle Act";*

(2) 25 Km/hr
- (a) on Fraser Street south of Munro Street;
- (b) on Lot 1 of Plan 14686, and Lot 4 of Plan 1784, and the full length of the thirty-three foot unnamed road allowance on the west side of Lots 1, 3 and 4 of Plan 1784 (Sports Centre);
- (c) on Lot A of Plan 15195 (Esquimalt Plaza);
- (d) on Lot 1 of Plan 36280 (Recreation Centre);
- (e) on the unnamed road off Esquimalt Road which is bounded by Esquimalt District Plan Nos. 6247, 5950 and 25543;
- (f) on any and all lanes.

(3) 30 Km/hr
- (a) on Alexander Road;
- (b) on Kingsmill Road;
- (c) on Cunningham Road;
- (d) on Parklands Drive;
- (e) on Fernhill Road;
- (f) on Bewdley Avenue from its intersection with the westerly boundary of Plan 1342 O.S. to the easterly boundary of Lampson Street;
- (g) on Esquimalt Road from the easterly limit of the municipality, thence westerly for a distance of one hundred and seventy (170) metres.
- (h) Gosper Crescent
- (i) on Admirals Road from its intersection with the southerly boundary of Lot 28, Plan 772 to the westerly boundary of Lot 28, Plan 772 to the westerly boundary of Lot A, Plan 24154 on Bewdley Avenue
- (j) on Old Esquimalt Road, from the westerly boundary of Lampson Street extending to its most westerly end at the intersection with Park Terrace.
- (k) on Old Esquimalt Road, from Lampson Street to Dominion Road ***[Amd No. 5, Bylaw 2716]***
- (l) on Selkirk Avenue from Tillicum Road to Arm Street ***[Amd No. 5, Bylaw 2716]***
- (m) on Lockley Road ***[Amd No. 5, Bylaw 2716]***
- (n) on Rockheights Avenue from Old Esquimalt Road to Lampson Street ***[Amd No. 8, Bylaw 2811]***

(4) 40 Km/hr
- (a) on Colville Road from Admirals Road to Lampson Street. ***[Amd No. 5, Bylaw 2716]***
- (b) on Esquimalt Road from a distance of one hundred and seventy (170 metres) from the easterly limit of the municipality to the intersection with Head Street. ***[Amd. No. 1, Bylaw No. 2676]***
- (c) on Lampson Street between Esquimalt Road and Old Esquimalt Road. ***[Amd. No. 2, Bylaw No. 2678]***
- (d) on Craigflower Road from Dominion Road to Admirals Road.

(5) The Municipal Engineer shall cause to be placed upon the streets and places referred to in subsections (2) and (3) of this Section, such signs indicating the speed limits aforesaid, as may be required.

(6) The provisions of this Section shall not apply to an emergency vehicle as defined in Section 2 hereof.

APPENDIX C
TYPES OF TRAFFIC CALMING

RAISED CROSSWALK

Description:

A raised crosswalk is a marked crosswalk at an intersection or mid-block location, which is constructed at a higher elevation than the road surface. The purpose of a raised crosswalk is to:

- Reduce vehicle speeds;
- Improve pedestrian visibility; and
- Reduce pedestrian-vehicle conflicts.

CHICANE

Description:

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. Typically, a series of at least three curb extensions is used. The purpose of a chicane is to:

- Discourage shortcutting or through-traffic; and
- Reduce vehicle speeds.

CURB EXTENSION

Description:

A curb extension is a horizontal intrusion of the curb onto the roadway resulting in a narrower section of roadway. The curb is extended on one or both sides of the roadway to reduce its width for two-way traffic. The purpose of a curb extension is to:

- Reduce vehicle speeds;
- Reduce crossing distance for pedestrians;
- Increase pedestrian visibility; and
- Prevent parking close to an intersection.

RAISED ISLAND

Description:

A raised median island is an elevated median constructed on the centreline of a two-way roadway to reduce the overall width of the adjacent travel lanes. The islands can have various surface treatments that range from hardscape to fully vegetated. The purpose of a raised island is to:

- Reduce vehicle speeds; and
- Reduce pedestrian-vehicle conflicts.

ROAD CLOSURE

Description:

A road closure is a barrier extending the entire width of a roadway, which obstructs all motor vehicle traffic along the roadway. A closure can change a four-way intersection to a three-way intersection, or a three-way intersection into a non-intersection. Gaps can be provided for cyclists. The purpose of a road closure is to:

- Eliminate short-cutting; and
- Eliminate through traffic.

SPEED CUSHION

Description:

A speed cushion is a rounded raised portion of a road with gaps between the raised portions.

The purpose of a speed cushion is to:

- Have less impact on large vehicles, such as fire trucks and buses;
- Reduce vehicle speeds; and
- Provide gaps for two wheeled vehicles, such as motorcycles and bicycles.

SPEED HUMP

Description:

A rounded raised area of a road, which is intended to slow traffic. The raised area has a steeper slope on the sides and smaller flat top area when compared to a speed table.

The purpose of a speed hump is to:

- Reduce vehicle speeds.

SPEED TABLE

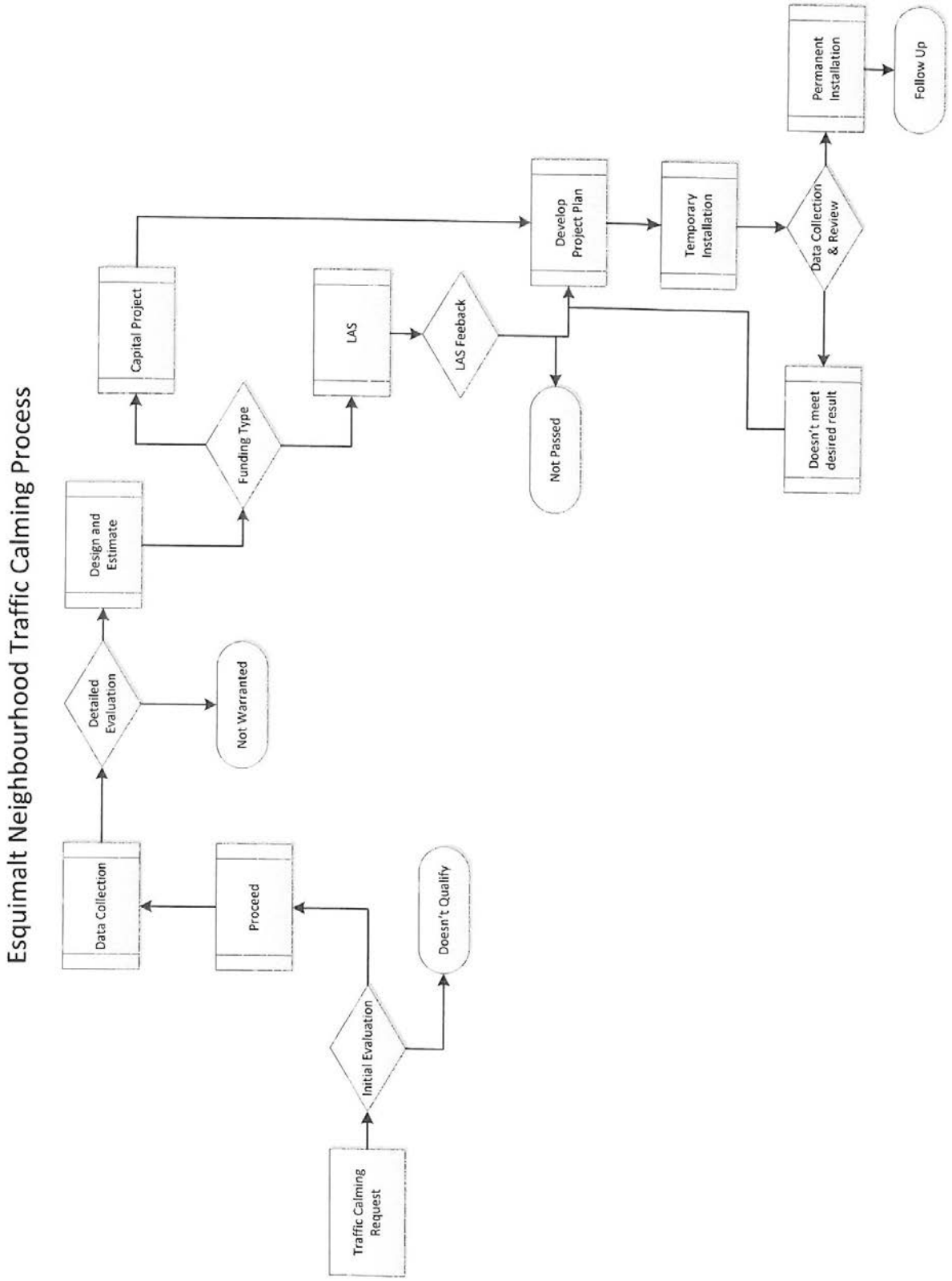
Description:

A flattened raised area of a road, which is intended to slow traffic. Speed tables are larger than speed humps and have a flat top. They have the same effect on small vehicle traffic as speed humps, but have less impact on large vehicles such as fire trucks and buses.

The purpose of a speed table is to:

- Reduce vehicle speeds.

APPENDIX D
TRAFFIC CALMING EVALUATION FLOW CHART


Esquimalt Neighbourhood Traffic Calming Process
Traffic Calming Request
Initial Evaluation
Doesn't Qualify
Proceed
Data Collection
Detailed Evaluation
Not Warranted
Design and Estimate
Funding Type
Capital Project
LAS
LAS Feeback
Not Passed
Develop Project Plan
Temporary Installation
Data Collection & Review
Doesn't meet desired result
Permanent Installation
Follow Up