



BRAVE

OAK BAY  
COMPLETE  
STREETS  
HANDBOOK

November 2015

DISTRICT OF  
OAK BAY

Oak Bay Municipal Hall  
2167 Oak Bay Ave  
Victoria, BC V8R 1G2

www.oakbay.ca  
t. (250) 598-3311  
f. (250) 598-9108

Monterey Ave.



DO NOT ENTER



DO NOT ENTER



# Contents

- 1. Introduction to the Complete Streets Handbook ..... 1**
  - 1.1 How to Use this Document .....1
  - 1.2 Commitment ..... 1
  - 1.3 Getting Involved .....1
  - 1.4 Relation to Other Documents ..... 2
  - 1.5 Vision + Principles .....3
  
- 2. Complete Streets Fundamentals ..... 5**
  - 2.1 What are Complete Streets? .....5
  - 2.2 What do Complete Streets Look Like? ..... 5
  - 2.2 What are the Benefits of Complete Streets? ..... 8
  
- 3. The Complete Streets Program ..... 10**
  
- 4. Planning a Street Enhancement Project ..... 15**
  
- 5. Complete Streets Design Toolbox ..... 20**

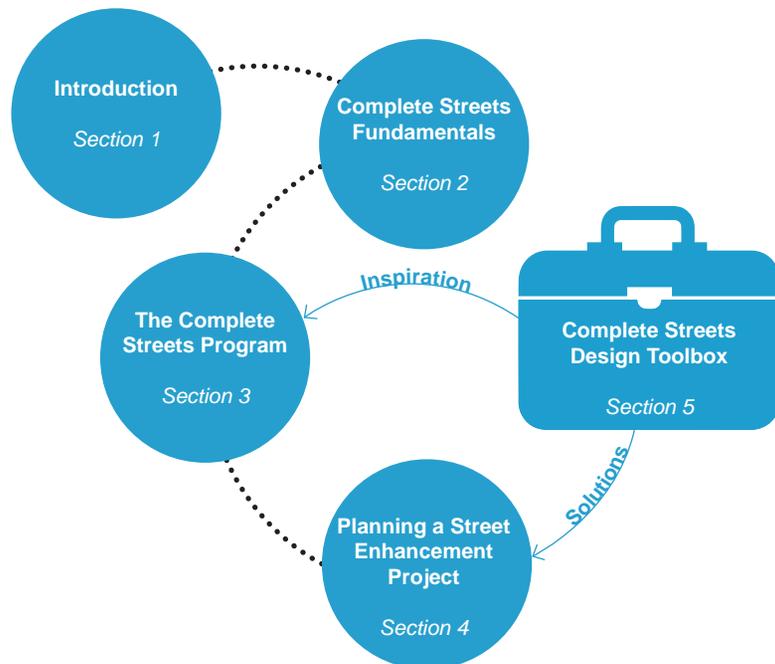
## Appendices

- Appendix A. Complete Streets Public Request Form
- Appendix B. Summary of Existing Policy

# 1. Introduction to the Complete Streets Handbook

## 1.1 How to Use this Document

The Oak Bay Complete Streets Handbook is to be used by District of Oak Bay staff, designers, developers, community groups, and others involved in the planning and design of streets in the District of Oak Bay. The Handbook defines complete streets (Section 2), provides guidance on the recommended complete streets program and project prioritization (Section 3), identifies a process for undertaking specific street enhancement projects (Section 4), and provides a “toolbox” of design options for street enhancement projects, with advice on where and when specific options are applicable (Section 5).



## 1.2 Commitment

The complete street policy (refer to the Official Community Plan) and this Handbook formalize the District of Oak Bay’s intent to plan, design, operate and maintain streets so they are safe and attractive for everyone. This document directs decision-makers to consistently fund, plan, design, and construct streets to accommodate all users, regardless of age or ability. By supporting this Complete Streets Handbook, Oak Bay is committing to design and operate street right-of-ways to enable safe access for all users, including pedestrians, bicyclists, public transit users, motorists and freight vehicles.

## 1.3 Getting Involved

Residents are encouraged to get involved in the complete streets program by contacting the Oak Bay Engineering Department to discuss a street enhancement idea or to submit a request. An explanation of how requests are made is included in Section 3. A resident wanting to submit a request for a new street enhancement should complete a Complete Streets Public Request Form; forms are available online and are included in *Appendix A* of this document. For more information, please contact:

Engineering Department, Oak Bay Municipal Hall  
2167 Oak Bay Avenue Victoria BC V8R 1G2  
Phone: 250-598-2042  
Fax: 250-598-9108  
Hours: Monday to Friday, 8:30 a.m. to 4:30 p.m.

## 1.4 Relation to Other Documents

The Handbook complements other planning documents such as:

- The Oak Bay Active Transportation Strategy, which identifies the primary active transportation network and key priorities for advancing active transportation in Oak Bay;
- The Official Community Plan, which defines road classes for Oak Bay's Road Network;
- The Capital Regional District Pedestrian and Cycling Master Plan (CRD PCMP), which identifies the primary inter-community cycling network;
- The Capital Regional District Regional Transportation Plan (RTP), which identifies the goods movement network;
- The BC Transit Victoria Transit Future Plan, which guides transit planning in the region over the next 25 years;
- Oak Bay Bylaw 4100, which regulates traffic and the use of streets within the Municipality of Oak Bay;
- Oak Bay Bylaw 3578, which regulates the subdivision and development of land within the Municipality of Oak Bay; and
- The BC Motor Vehicle Act.

A summary of other policy documents that relate to Oak Bay's streets is included in *Appendix B*.

The guidance in this Handbook does not establish strict standards and does not supersede any existing federal, provincial, or District laws, rules, or regulations. All projects remain subject to relevant statutes, reviews, and approvals. This Handbook references design guidance within the *CRD PCMP Design Guidelines*, the *CRD Cycling Destination Wayfinding Guidelines*, the Institute of Transportation Engineers (ITE) *Canadian Guide to Neighborhood Traffic Calming*, the Transportation Association of Canada (TAC) *Pedestrian Crossing Control Guide*, the *TAC Geometric Design Guide for Canadian Roads*, the *TAC Bikeway Traffic Control Guidelines*, the *Pedestrian Crossing Control Manual for British Columbia*, the *CROW Design Manual for Bicycle Traffic*, the *Canadian Standards Association Accessible Design for the Built Environment*, the *Manual of Uniform Traffic Control Devices (MUTCD)*, *BC Transit Infrastructure Design Guidelines*, the National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* and the *NACTO Urban Street Design Guide*.

## 1.5 Vision + Principles

Several key themes emerged from Oak Bay's existing transportation-related plans and policies that shape the vision and principles guiding this document:

- Promote livable communities and smart growth
- Integrate the multi-modal transportation network
- Accommodate and encourage safe use of the transportation network by residents of all ages and abilities
- Decisions should be guided by a hierarchy of transportation priorities, with pedestrians first, followed by cyclists, transit-users, high occupancy vehicles, freight vehicles, and finally, single-occupant vehicles.

### Vision:

***Oak Bay's street network allows residents of all ages and abilities to enjoy safe and convenient multi-modal transportation.***

### Principles:

1. Prioritize public infrastructure improvements and spending based on the following hierarchy: universal accessibility, walking, cycling, transit, goods movement and high-occupancy vehicles, and low-occupancy vehicles.
2. Calm and divert traffic where appropriate to create neighborhood streets.
3. Provide safe and obstruction-free walking spaces for pedestrians.
4. Improve the interface of adjacent land uses with the public realm and incorporate street furnishings and placemaking to contribute positively to the pedestrian experience.
5. Provide a network of safe and comfortable bicycle facilities.
6. Provide accessible, attractive, safe transit stops.
7. Ensure access for goods movement and emergency services.
8. Provide and preserve green spaces to manage stormwater and create a sense of place.



## 2. Complete Streets Fundamentals

### 2.1 What are Complete Streets?

**Complete Streets are streets for everyone.** They are designed and operated to enable safe access for users of all ages and abilities, including pedestrians, bicyclists, motorists and transit riders. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from transit. They accommodate vehicles without negatively impacting other users of the street.

Incomplete streets – those designed with only cars in mind – limit transportation choices by making walking, bicycling, and public transit inconvenient, unattractive, and, too often, dangerous.

Streets are the most vital, yet under-utilized public spaces in communities. In addition to providing space for travel, streets play a big role in the public life of communities and should be designed as public spaces as well as channels for movement.

### 2.2 What do Complete Streets Look Like?

There is no singular design prescription for a Complete Street - each is unique and responds to its immediate and broader community context. Examples of streets from the Capital Region exhibiting elements of Complete Streets are shown on the following pages.



McKenzie Avenue (near the University of Victoria) includes a protected bicycle lane, landscaped centre median and rainwater retention ponds



Wide sidewalks and considerable landscaping has made Goldstream Avenue in Langford a beautiful, pedestrian-friendly urban street



Traffic is calmed on Jutland Road in Victoria with curb extensions, street trees and a textured road surface



A pleasant public space is created using rain gardens and on-street parking to buffer pedestrians from a Blanshard Street



A crosswalk on Royal Oak Drive is made safer and better integrated with the streetscape with a centre median, landscaping and curb extensions that reduce crossing distance



Street enhancements in Brentwood Bay village retain access to commercial properties while improving pedestrian conditions and beautifying the area



Traffic calming diversions in the Oaklands neighborhood restrict through traffic to major roads while retaining access for pedestrian and cyclists



Priorities have changed on Fort Street where on-street parking has become a "parklet", speed limits have dropped and signs installed alerting motorists to the presence of pedestrians and cyclists

## 2.2 What are the Benefits of Complete Streets?

Changing policy to routinely include the needs of people on foot, public transportation, and bicycles and making these travel choices more convenient, attractive, and safe means:



**Greater Equality** | Mobility options are available for people of all ages and abilities, including those without access to a personal vehicle.



**Safer Communities** | Enabling residents to replace a portion of vehicle trips with walking and cycling trips improves traffic safety and creates more vibrant streets where neighbors watch out for one another.



**Health + Well-Being** | Promotion of cycling, walking, and transit encourages healthy lifestyles and reduces air pollution.



**Environment** | Including plantings and trees within the road right-of-way reduces storm water run-off and heat island effect.



**Improved Travel Choice** | Walking, riding bikes, and riding buses will be safer and easier. People of all ages and abilities will have more options for daily trips and do not need to rely solely on automobiles.



**Economic Growth** | Building new sidewalks and creating bike lanes has been shown to create more jobs than traditional car-focused transportation projects.



**Balanced Budgets** | Complete Streets are prudent when communities are tightening budgets and looking to ensure long-term benefits from investments. An existing budget can incorporate Complete Streets projects with little to no additional funding by allocating funds to projects that improve overall mobility. Many of the ways to create more complete roadways are low-cost and high-impact.



**Congestion Reduction** | The efficiency and capacity of existing roads will be improved, by moving more people in the same amount of space – just think of all the people who can fit on a bus versus the same amount of people each driving their own car. Getting more productivity out of the existing road and public transportation systems is vital to reducing congestion.



The GRAFTON BOOKSHOP

sponsored by  
IVY'S BOOKSHOP

marlin travel

40

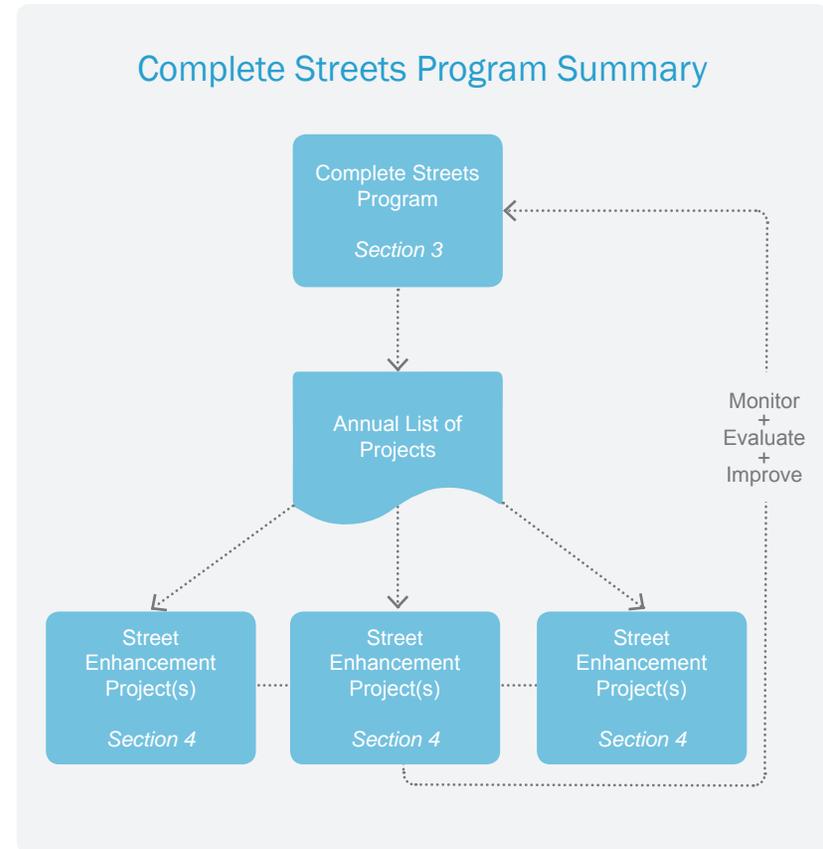
### 3. The Complete Streets Program

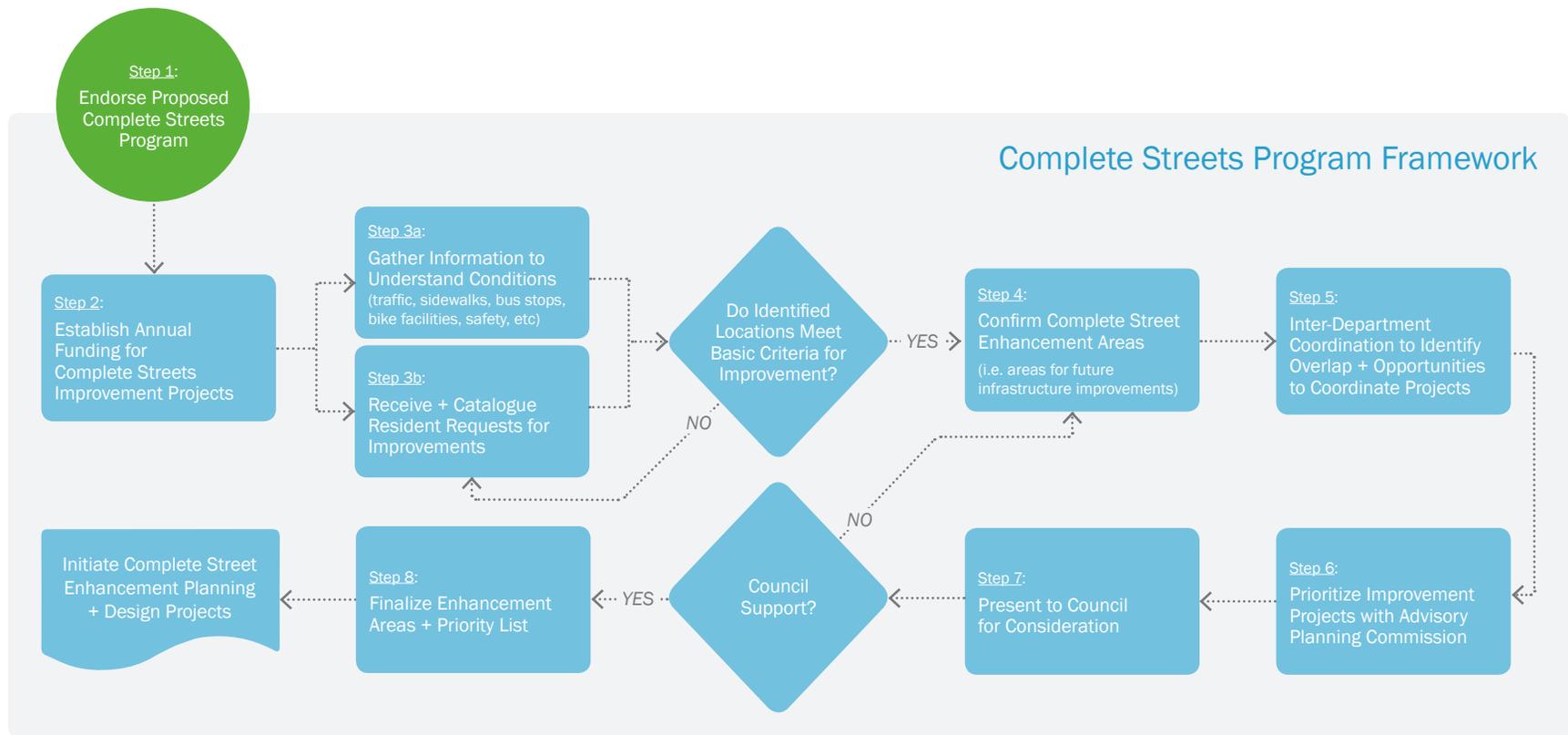
The Complete Streets Program is a proactive approach to ensure that on-going street improvements are made by the District to address safety issues and community concerns. This Program seeks to consider all street enhancement needs as a whole so that areas in greatest need are given greatest consideration, and so that resources committed to street enhancements are used efficiently and distributed throughout Oak Bay.

Through the program, an annual list of projects that define areas scheduled for street enhancement are developed. The street enhancement projects will be monitored and evaluated to ensure improvements are meeting intended objectives and for the continuous improvement of the program.

The process for developing an annual list of priority areas involves the following steps, each described in detail on the following pages:

- Step 1 | Establish proposed Complete Streets Program
- Step 2 | Establish Annual Funding
- Step 3a | Gather Information
- Step 3b | Catalogue Resident Requests
- Step 4 | Confirm Enhancement Areas
- Step 5 | Coordinate between District Departments
- Step 6 | Prioritize Improvements with APC
- Step 7 | Present to Council
- Step 8 | Finalize Enhancement Areas + Priority List





### Step 1: Endorse “Complete Streets” Program

The District should commit to improve Oak Bay’s streets by endorsing or confirming support for the Complete Streets Program set forth in this document. This includes a commitment to establish annual funding for street enhancement planning, construction and maintenance (see Step 2), and a commitment to direct District staff to pursue the process outlined in this document (see Step 3 to 8).

### Step 2: Establish Annual Funding

Annual budgets should be established for street enhancement planning, construction and maintenance.

### Step 3a: Gather Information

The Engineering department will assemble and maintain a database of information to understand the need for street enhancements and properly assess the suitability of complete street design options. This will involve assembling existing information, collecting new information to address gaps in available information, and on-going data collection process to ensure the database reflects current conditions.

The database will contain the following information:

#### Existing Conditions:

- Inventory of existing pedestrian infrastructure and condition - sidewalks, trails, crosswalks, curb ramps
- Inventory of existing bicycle infrastructure
- Inventory of existing bus stops - location, amenities, condition
- Measures of vehicle speed, classification and volume for Special, Arterial and Collector roads
- Database of high frequency collision locations (ICBC data)

#### Planned Routes + Priority Areas<sup>1</sup>:

- Road Network (*OCP*, Schedule C)
- Pedestrian and Cycling Networks (*AT Strategy*, Section 4)
- Pedestrian Priority Areas (*CRD PCMP*, Map 1)
- Primary Inter-Community Bike Network (*CRD PCMP*, Map 8)
- Frequent Transit Network (*Transit Future Plan*)
- Goods Movement Priority Corridors (*CRD RTP*, Exhibit 4.15)

<sup>1</sup> Refer to Section 1.4, page 2 for descriptions of each planning document

### Step 3b: Resident Request Process

Resident requests for complete street treatments will be received through the Engineering department using the “Resident Request for Complete Street Enhancement” form (see Appendix A). This form provides for a standardized method of receiving requests and provides District staff with basic information by which to better understand and evaluate requests.

Engineering staff will consider the request against general criteria to determine if it is valid and something the District should address. Requests are considered against the following basic criteria:

- A safety issue is demonstrated through collision history (all modes) or a concern validated by the Director of Engineering Services;
- Addresses a location(s) with accessibility issues;
- Vehicle speeds exceed the posted speed limit (+10 km/h threshold);
- Traffic volumes exceed maximum threshold on Local or Collector roads (1,000 vpd for Local, 5,000 vpd for Collector);
- Requests to address network gaps (i.e. missing sidewalk, bike lane ends) are supported by established network plans;
- Non-local traffic represents 25% or more of all traffic (Local roads only);
- Request for specific design treatments are considered appropriate for the road classification per the Complete Street Design Toolbox Matrix (see page 21)

Failure to meet basic criteria will be communicated to the resident and the location not given further consideration. Requests that are considered valid will be entered into a catalogue maintained by the Engineering department that includes the residents name, location of the request, and nature of the improvement being sought.

#### Step 4: Identify Enhancement Areas

The Engineering department will use the information database (Step 3) and accepted resident requests (Step 4) to identify candidate street enhancement areas. Identified areas are expected to meet at least one of the following criteria:

- Address an immediate safety concern demonstrated by collision incidence or identified by staff
- Align with a known or suspected development proposal on an adjacent private property(s) and presents an opportunity to coordinate enhancements
- Align with a project(s) being undertaken by adjacent jurisdiction (Victoria, Saanich) and presents an opportunity to coordinate enhancements
- Address an identified gap or deficiency in existing networks
- Generally consistent with the OCP and other planning directions

Enhancement areas will be preliminarily prioritized by staff based on the extent to which they address the above mentioned criteria (in order of priority).

#### Step 5: Inter-Department Coordination

The prioritized enhancement areas will be submitted to the Public Works, Building + Planning, Parks + Recreation, Police and Fire departments for review and comment. The primary objective of this step is to identify opportunities to coordinate enhancement projects with other District initiatives and adjust the enhancement priorities to reflect opportunities for coordination.

#### Step 6: Prioritize Enhancement Areas with APC

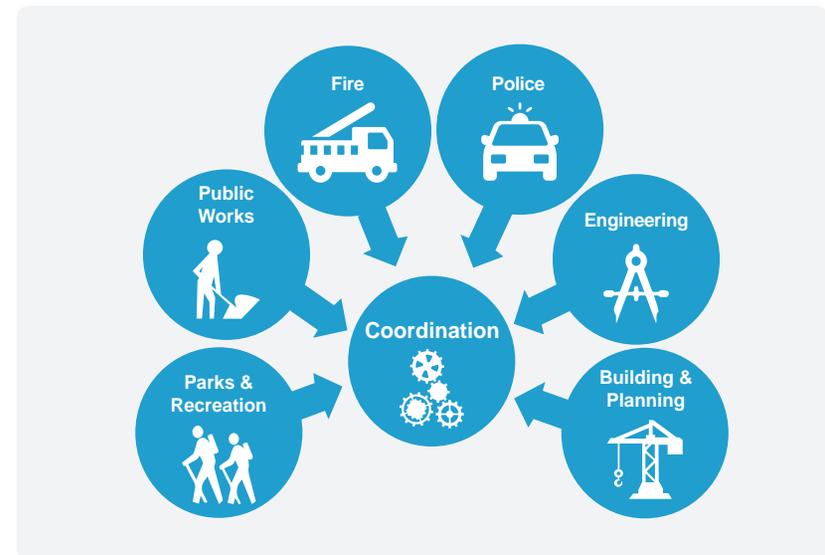
The Advisory Planning Commission (“APC”) will be used as the advisory group to review and comment on the recommended enhancement areas. Staff’s recommended priority areas will be presented to the APC for feedback and recommendation.

#### Step 7: Council Endorsement

Staff will present the prioritized list of enhancement areas to Council for their consideration and endorsement.

#### Step 8: Finalize Enhancement List

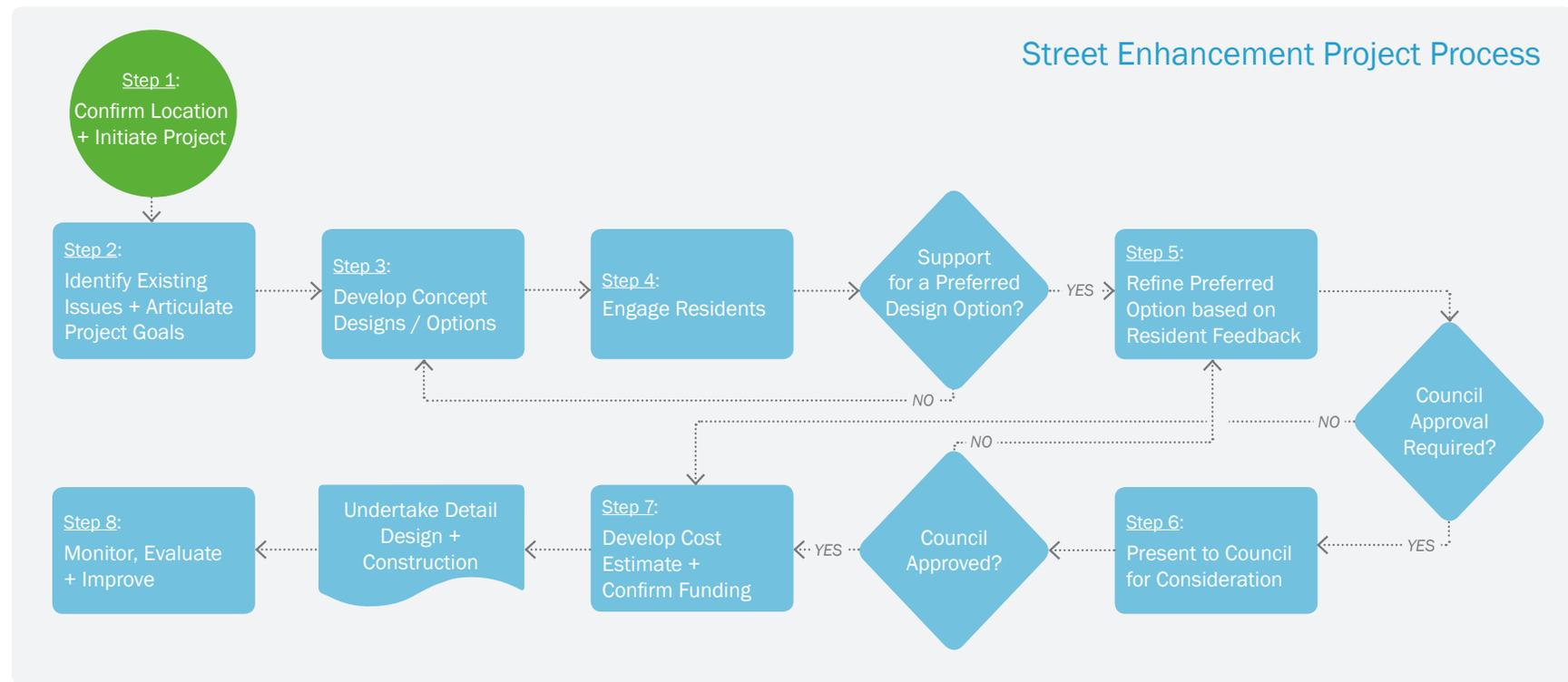
The prioritized list of enhancement areas will be finalized that clarifies the areas / locations for street enhancements and the types of issues that are to be addressed and possible solutions.





## 4. Planning a Street Enhancement Project

The District should follow a consistent process for the planning and implementation of street enhancement projects. The planning and implementation of a street enhancement project involves: initiating the project (Step 1), collecting data to quantify the problem (Step 2), developing concepts (Step 3), engaging with the community to solicit feedback on the concepts (Step 4), preparing the plan (Step 5), seeking Council approval as needed (Step 6), developing cost estimates and confirming funding (Step 7), and completing a post-project evaluation to document issues, successes, and lessons learned (Step 8).



### Step 1: Confirm Location + Initiate Project

A project or location is identified through the Complete Street Program process (see Section 3) and brought forward for implementation.

### Step 2: Identify Issues + Articulate Goals

Data is required to confirm the suspected issues and ensure the plan that is developed responds to the confirmed issues. It is important at this stage to focus on identifying the real problem(s). Data collection includes, as applicable:

- Pedestrian realm audits<sup>1</sup>
- Bicycle safety audits<sup>2</sup>
- ICBC collision data
- Traffic volumes
- Vehicle speeds
- Short-cutting vehicles

Once sufficient data has been collected, a clearly articulated set of goals should be established for the enhancement project to clarify why the project is being pursued and what it is intended to achieve.

<sup>1</sup> Pedestrian realm audit resources:

- Pedestrian Mobility and Safety Audit Guide (ITE), <http://library.ite.org/pub/e1d018de-2354-d714-514f-2856dd5d88d2>
- Walkability Audit Tool (Centre for Disease Control), [http://www.cdc.gov/nccdphp/dnpao/hwi/downloads/walkability\\_audit\\_tool.pdf](http://www.cdc.gov/nccdphp/dnpao/hwi/downloads/walkability_audit_tool.pdf)
- Pedestrian Road Safety Audit Guidelines and Prompt List - United States Department of Transportation
- Pedestrian Environment Data Scan (University of Maryland), <http://planningandactivity.unc.edu/Audit%20Protocol%20v.2.pdf>

<sup>2</sup> Bicycle Road Safety Audit Guidelines and Prompt Lists, [http://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/fhwasa12018](http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa12018)

### Step 3: Develop Concept Designs

A minimum of two (or more) conceptual designs should be developed as options to address the project goals established in Step 2. A “pros and cons” evaluation should also be prepared to compare design options. Designs should be developed in consideration of the District’s street design standards and the complete street design toolbox options presented in Section 5.

#### Design Checklist

This checklist provides a set of considerations in developing concepts (Step 3).

- Has the appropriate data been collected to assess the suspected issues?
- Does the design address the project goals?
- Will the design increase walking, cycling, or transit use?
- Will the design protect vulnerable road users and improve safety?
- Will the proposed concept accommodate service vehicles (i.e. day-to-day services, transit, garbage collection, street cleaning, and emergency services)?
- Has the surrounding transportation network been considered?

## Road Classifications

**Arterial roads** are the largest that occur in Oak Bay. These connect the major activity centres and carry large volumes of traffic entering and leaving Oak Bay. Example arterial roads include Cadboro Bay Road, Cedar Hill X Road and Foul Bay Road.



**Collector roads** collect traffic from local roads and channel it to arterial roads. Collectors may still maintain most of the characteristics of a local road. In established communities such as Oak Bay, Collectors are designated based on historical use. Examples include McNeill Avenue, Haultain Street and Musgrave Street.



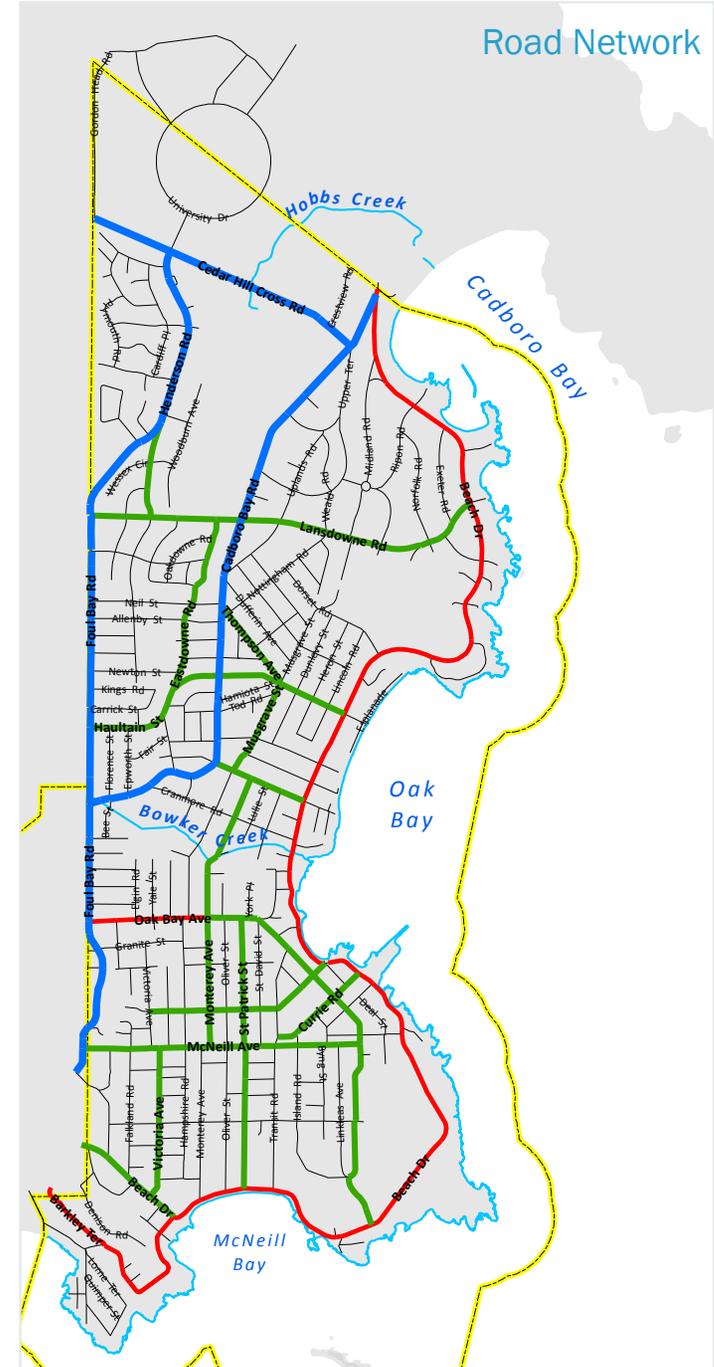
**Local roads** are the most common roads within Oak Bay. Their primary purpose is to serve the houses that directly about them.



**Special roads** do not fit easily into any categories because they perform a number of roles. In addition to being important vehicle routes, they have other functions that may be environmental or recreational. Beach Drive and Oak Bay Avenue are designated as Special Roads.



## Road Network



#### Step 4: Engage the Community

Street enhancement concepts should be discussed with the community to identify a preferred option and refine the design concept, as follows:

- Oak Bay residents should be provided with an opportunity to provide input into the design concepts, with the goal of identifying a preferred design and refining to reflect input. Opportunities for input may vary depending on the location and project, but could include an open house, workshop, website-based, survey, door-to-door conversations, or other means.
- Stakeholder groups and organizations should also be contacted, where relevant, to ensure the proposed options consider the needs of each organization. Refer to the stakeholder checklist (at right) for a list of possible stakeholders.

#### Step 5: Prepare Preferred Design

A final street enhancement plan is prepared. In most cases, the final plan is the option that received the highest level of support from the community. Where justified, an alternate option or combination of a number of options may be considered. Plans should include steps to monitor and evaluate project success, as well as maintain the infrastructure over time.

#### Step 6: Submit Plan to Council

Some plans may require Council approval prior to implementation. In those cases, the plans are submitted to Council for approval.

#### Step 7: Cost Estimates + Confirm Funding

Cost estimates should be developed (Class “D”) for the preferred design option and compared against the available budget. Where costs will exceed budget, either alternative design or increased budget may be considered. The project will move forward to detailed design and construction once a budget has been confirmed.

#### Step 8: Monitor, Evaluate, Improve

Enhancements should be monitored over time to build understanding of what works and what does not. This involves data collection before and after construction, and cataloguing resident feedback.

#### Stakeholder Checklist

##### District of Oak Bay contacts:

- Building and Planning department
- Public Works
- Parks and Recreation department
- Police department
- Fire department
- Council

##### External contacts:

- BC Transit
- Residents
- Local Businesses
- Oak Bay Community Association
- Schools
- Advocacy Organizations
- University of Victoria
- Neighboring Municipalities



## 5. Complete Street Design Toolbox

There is a range of street enhancement features used in Canadian communities. The objective of this section is to identify recognized street enhancement features suitable for application in Oak Bay, explain the situations where they may be applied, and provide references to specific design guidance to ensure safe and consistent application in Oak Bay.

Not all complete street design solutions are appropriate in all locations. Rather, solutions must be applied in consideration of the road classification, land use and other context-specific factors. Ideally, several solutions may be used in combination to achieve the desired goals for the particular area.

This toolbox is intended to be used in implementing a complete streets program to provide inspiration for the re-envisioning of streets (Step 4), and in developing concepts for each of the street enhancement projects (Step 3).

The guidance in this toolbox does not establish strict standards and does not supersede any existing federal, provincial, or District laws, rules, or regulations, including the *Oak Bay Bylaw 4100* (traffic and use of streets), the *Oak Bay Bylaw 3578* (subdivision and development of land), and the *BC Motor Vehicle Act*. All projects remain subject to relevant statutes, reviews, and approvals.

## Complete Street Design Toolbox Matrix

Design Treatment		ROAD CLASSIFICATION				Primary Application
		Arterial Road	Collector Road	Local Road	Special Road	
Accessible Design	A1. Curb ramp	⚠	⚠	⚠	⚠	Access for all including those with disabilities.
	A2. Tactile paving	⚠	●	◐	⚠	
	A3. Accessible ped. signals	⚠	●		⚠	
Walking Facilities	B1. Sidewalk	⚠	⚠	◐	⚠	Safe and comfortable walking environment.
	B2. Curb extensions	◐	○	○	◐	
	B3. Crosswalks	●	◐	○	●	
Bicycling Facilities	C1. Protected bicycle lane	●	--	--	●	Safe and comfortable cycling environment.
	C2. Bicycle lane	○	●	--	○	
	C3. Shared lane	--	○	--	○	
	C4. Bicycle greenway	--	◐	●	--	
Traffic Calming	D1. Traffic volume management	--	◐	●	--	Reduced traffic, safer speeds.
	D2. Traffic speed management	○	◐	◐	◐	
Transit	E1. Basic bus stop	○	◐	◐	○	Transit access.
	E2. Enhanced bus stop	●	◐	○	●	
Placemaking	F1. Street tree and greenspace	◐	◐	○	●	Enhanced streetscape, sense of place.
	F2. Lighting, street furniture, art	●	◐	○	●	
	F3. Celeb. & temp. installation	◐	◐	○	●	

### DESIGN SUITABILITY

Toolbox items are identified in the matrix with consideration for their suitability on each road class, as follows:



#### Requirement

Design treatments that should be incorporated into all street improvements on identified road classes



#### High Priority

Design treatments that are appropriate for identified road classes and are high priority for implementation



#### Moderate Priority

Design treatments that are appropriate for identified road classes and are moderate priority



#### Low Priority

Design treatments that may be appropriate for identified road classes, but are of lesser priority



#### Not Appropriate

Design treatments that are generally inappropriate on identified road classes

## A. Accessible Design

Accessibility (or accessible design) refers to the degree to which a street can be used by all people, with particular attention to individuals with physical, sensory, or cognitive disabilities. The District considers streets that are accessible to all residents a priority and will continue to pursue accessible design where appropriate.

### A1. Curb Ramp

**What is it?** A curb ramp provides for a gradual transition where there is vertical differentiation between adjacent walking surfaces.

**What issue(s) does it address?** Individuals with physical or cognitive challenges and individuals with mobility aids (scooters, strollers, etc.) rely heavily on curb ramps to safely and comfortably navigate sidewalks and crosswalks. The broader population also benefits from a more comfortable pedestrian experience.

#### When should it be considered?

- Curb ramps should be present in all instances where a sidewalk or walking route changes grade.
- Typical applications include crosswalks, where a sidewalk intersects a roadway, and where a sidewalk or walkway ends.
- Highest priority areas for street enhancement include:
  - The *CRD PCMP* Pedestrian Priority Areas (Map 1); and
  - BC Transit bus routes.

**Design Considerations.** The District has a unique curb ramp design that is generally consistent with best practices from elsewhere (see photo). Design guidance is found in the *PCMP Design Guidelines*, *TAC Geometric Design Guide for Canadian Roads*, and *Canadian Standards Association Accessible Design for the Built Environment*. Curb ramps should be accompanied by tactile features (see A2).



An example of the District's standard curb ramp and tactile strip

### A2. Tactile Paving

**What is it?** Tactile paving is a distinctive textured ground surface detectable by a cane or underfoot on sidewalks and walking routes.

**What issue(s) does it address?** Tactile warnings are used to alert people with visual impairments of their approach to the roadway and hazardous drop-offs. People who are blind or visually impaired are alerted of impending danger from vehicle impact or a grade change.

#### When should it be considered?

- Instances where a sidewalk or walking route changes grade.
- Instances where a walking route enters the roadway.
- Commonly accompany stairs and curb ramps.
- Highest priority areas for street enhancement include:
  - The *CRD PCMP* Pedestrian Priority Areas (Map 1);
  - Arterial roads, special roads, and collector roads; and
  - BC Transit bus routes.

**Design Considerations.** Additional guidance may be found in the *PCMP Design Guidelines*, and the *Canadian Standards Association Accessible Design for the Built Environment* standard.

### A3. Accessible Pedestrian Signal

**What is it?** Accessible pedestrian signals are crossing signals designed to meet the needs of those with physical or sensory disabilities in activating a crossing signal and crossing safely.

**What issue(s) does it address?** Several measures exist to increase the accessibility of pedestrian signals and each one addresses a separate issue:

#### Issue 1: Activating the Crossing Signal

- Fixed-time Signalling: Ensures consistent crossing opportunities and avoids searching for the signal activation button.
- Passively-actuated Signal Activation: Enables pedestrians to avoid searching for the signal activation button.
- Activation Button Locator Tone: Assists those with visual impairments to locate the signal activation button.
- High-visibility Activation Button: Assists those with moderate visual impairment to locate the signal activation button.
- Activation Button Mounting Height: Lower mounting heights enable individuals with mobility aids, children, and smaller adults to activate the crossing signal.

#### Issue 2: Crossing Safely

- Audible and Vibro-tactile Walk Indicators: Communicates to those with visual impairments that the crossing signal is active.
- Leading Pedestrian Intervals: Provides pedestrians with a 3-7 second head start to enhance the visibility of pedestrians at the intersection and reduce conflict.
- Physical Separation between Pedestrian Signal Controls: Assists visually impaired understand which crossing is active.

#### Crossing safely (cont.)

- Verbal Announcement Stating Which Crossing is Active: Assists those with visual impairments to understand which crossing is active when adequate separation cannot be met due to site constraints.
- Pedestrian Countdowns: Countdown timers assist pedestrians to know how long they have to finish crossing the street before the signal will change, which provides valuable information to those with mobility challenges.
- Reduced Crossing Distance: Various measures exist to reduce the amount of time pedestrians are exposed to traffic. These are addressed under tool B3.

#### When should it be considered?

- Signalized crosswalks a large number of pedestrians with disabilities are expected.
- Fixed-time signalling or passively-actuated signals activation is preferred to other signal activation methods, which still present a level of difficulty to those with physical or sensory disabilities.
- Highest priority areas for street enhancement include:
  - The CRD PCMP Pedestrian Priority Areas (Map 1);
  - Arterial roads, special roads, and collector roads; and
  - BC Transit bus routes.

**Design Considerations.** Additional guidance may be found in the *PCMP Design Guidelines*, the *NACTO Urban Street Design Guide*, the *TAC Pedestrian Crossing Control Guide*, and the *Canadian Standards Association Accessible Design for the Built Environment* standard.

## B. Walking Facilities

Walking facilities provide an area for pedestrian travel. The walking network is primarily comprised of sidewalks and crosswalks.

### B1. Sidewalk

**What is it?** Sidewalks provide an area for pedestrian travel that is separated from vehicle traffic.

**What issue(s) does it address?** The sidewalk not only provides a safe and comfortable place to walk - it is also where people interface. Designs that create a high-quality experience at the street level enhance the economic strength of commercial districts and the quality of life of neighborhoods.

#### When should it be considered?

- Basic, unobstructed, level, continuous, and well-maintained sidewalks with a width of at least 1.5 metre (m) should be considered on all streets.
- Enhanced sidewalks providing a frontage zone, a wider pedestrian through zone, a street furniture zone, and/or a buffer/enhancement zone, as well as street furniture, amenities, lighting, shade, and street-level activity, should be included on streets with higher traffic speeds and volumes (e.g. collector and arterials roads), as well as those with higher pedestrian volumes and commercial activity (e.g. special roads).
- Interim sidewalk widening should be considered in the near-term to ease pedestrian congestion and increase pedestrian comfort, as well as to plan and test sidewalk widening in advance of full reconstruction. Paint, planter beds, and bollards may be used to temporarily expand the sidewalk into the adjacent travel or parking lane.

- Highest priority areas for street enhancement include:
  - The CRD PCMP Pedestrian Priority Areas (Map 1).
  - Arterial roads, special roads, and collector roads.
  - BC Transit bus routes

**Design Considerations.** Oak Bay Bylaw 3578 specifies that the District may require new subdivisions and developments to dedicate and construct walkways on one or both sides that are not less than 3 m wide, when deemed necessary to provide access to schools, playgrounds, commercial facilities, public transportation, community amenities, or for the proper circulation of pedestrian traffic.

Sidewalks may be expanded as an interim measure to provide short-term benefits and evaluate results. Refer to the *NACTO Urban Street Design Guide*.

Street furniture, amenities, lighting, shade, and street-level activity are addressed further under the “Placemaking” tools (see F1 to F3)

Detailed guidance may be found in the *PCMP Design Guidelines*, and the *NACTO Urban Street Design Guide*, the *TAC Geometric Design Guide for Canadian Roads*, and the *Canadian Standards Association Accessible Design for the Built Environment* standard.

## B2. Curb Extension

**What is it?** Various measures exist to extend the curb so as to minimize the distance required to cross a street and shorten the length of time that a pedestrian is exposed to traffic, as well as to improve sight lines at corners for turning vehicles.

**What issue(s) does it address?** Crossing distance reduction measures visually and physically narrow the roadway, reducing vehicle speeds while creating safer and shorter crossings for pedestrians, and increasing space for street furniture, benches, plantings, and street trees. Street furniture and plantings are addressed under tools F1 - F3.

### When should it be considered?

- Curb extensions should be considered to reduce vehicle speeds and enhance the pedestrian environment.
- Intersection curb extensions should be considered wherever pedestrian crossing safety is of concern or excessive vehicle turning speed is an issue. Measures include:
  - **Gateway Curb Extension:** Gateway curb extensions are located at the mouth of an intersection and increase the visibility of pedestrians by aligning them with the parking lane. Gateway curb extensions should be considered whenever on-street parking is present to increase visibility and reduce crossing distance.
  - **Curb Radius Reduction:** The reconstruction of an intersection corner using a smaller radius. Small curb radii require vehicles to slow when making a right turn and result in a shorter road crossing distance for pedestrians. Curb radius reduction should be considered where vehicle turning speeds exceed 15 km/h in pedestrian areas.
- Mid-block curb extensions should be considered for specific purposes such as reducing vehicle speeds or improving a mid-block crossing. Measures include:
  - **Pinch-Point Curb Extension:** Mid-block curb extension intended to reduce traffic speed or to enhance mid-block crossings. May provide space for street furnishings, plantings, and bicycle racks. Should be considered in conjunction with mid-block crossings or where vehicle travel speeds are an issue.
  - **Chicane:** 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. May be considered on local and collector streets where vehicle travel speeds are an issue.
  - **Bus Bulb:** A curb extension that aligns the bus stop with the parking lane, eliminating the need for the bus to merge into traffic, thereby reducing travel times. Should be considered on bus routes along the Frequent Transit Network, as defined by the *Victoria Region Transit Future Plan*. For more on bus stop design, see tools E1-E2.
- Interim curb extensions should be considered to calm traffic and increase pedestrian comfort in the near-term, as well as to plan and test curb extensions in advance of full reconstruction. Paint, planter beds, and bollards may be used to temporarily define a curb extension.
- Highest priority areas for street enhancement include:
  - The CRD PCMP Pedestrian Priority Areas (Map 1);
  - Arterial roads, special roads, and collector roads; and
  - BC Transit bus routes.

**Design Considerations.** Curb extensions may be combined with crosswalk enhancements (tool B3) and stormwater and placemaking features (tools F1-F3).

Detailed guidance may be found in the *Canadian Guide to Neighborhood Traffic Calming*, as well as the *PCMP Design Guidelines* and the *NACTO Urban Street Design Guide*.

### B3. Crosswalk

**What is it?** A crosswalk is a place designated for pedestrians to cross a road. In general, pedestrians are not inclined to travel very far out of direction to access a designated crossing, so provision of sufficient crossings is critical. Crosswalks may include a combination of visibility techniques, refuge islands, and reduced crossing distance measures (see B3), or they may be raised, or an extension of the sidewalk itself. They may be located at intersections or mid-block.

**What issue(s) does it address?** Crosswalks guide pedestrians toward the safest possible routes, while making them more visible and reinforcing their right-of-way. Some techniques are also effective speed reduction measures.

**When should it be considered?** The *TAC Pedestrian Crossing Control Guide* provides a decision-support tool for assessing whether a location is a candidate for a pedestrian crossing control.

- Basic, painted crosswalks should be considered at all intersections controlled by traffic signals or stop signs.
- Painted crosswalks may be transverse crosswalks (two parallel lines) to zebra crosswalks (alternating stripes).
- Mid-block crossings should be considered where there is a significant pedestrian desire line, e.g. parks, plazas, high-volume mid-block bus stops, significant building entrances, and mid-block passageways.

- Enhanced crosswalks may be considered at high-frequency crossings and where a large number of children, elderly pedestrians, or pedestrians with disabilities are expected.
- Enhanced crosswalks may include a combination of the following:



**High Visibility Crosswalk:** Techniques to increase crosswalk visibility include texturing, signage, flashing lights, and advance stop bars. These techniques should be considered where crosswalk visibility is a key issue, which is particularly of concern at mid-block and uncontrolled crossings on arterial and special roads.

**Refuge Island:** An elevated median constructed on the centreline of a two-way road to provide a protected space for pedestrians mid-crossing and to reduce the overall width of adjacent travel lanes. Refuge islands also provide opportunities for landscaping and improve the streetscape. Refuge islands should be considered on streets with long crossings, in locations with a high use from elderly pedestrians or pedestrians with disabilities, and/or mid-block and uncontrolled crossings on Arterial and Special roads.



**Raised Crosswalk:** A marked pedestrian crosswalk constructed at a higher elevation than the adjacent roadway. Should be constructed such that it is level with the sidewalk in order to improve accessibility. Raised crosswalks are effective in reducing vehicle speeds and increasing visibility. May also be textured for additional visibility (see textured crosswalk). Raised crosswalks should be considered on streets with high use from elderly pedestrians or pedestrians with disabilities and as part of a larger effort to reduce vehicle speeds on local and collector streets.

**Raised Intersection:** Raised intersections are similar to raised crosswalks, except that the entire intersection is raised above the level of the adjacent roadway. Criteria for consideration for a raised intersection are the same as for a raised crosswalk.

**Sidewalk Extension:** Sidewalk continued across a street intersection. May be raised (see raised crosswalk). Sidewalk extensions provide a visual cue to drivers that they are entering a neighborhood street and in reducing excessive vehicle speeds. Should be considered at locations where an arterial road intersects a collector or local street.

- Highest priority areas for street enhancement include:
  - The *CRD PCMP* Pedestrian Priority Areas (Map 1)
  - Schools, village centres, civic buildings, parks, and retirement communities
  - BC Transit bus routes

**Design Considerations.** Designers should take into account both existing and projected crossing demand. Frequent crossings reinforce walkability and have the potential to generate greater demand.

Crosswalks should reflect the accessibility features described in tools A1 and A2. Many of the crosswalk tools described above should be combined with the tools to reduce crossing distance described in tool B3. Signalized crossings should reflect the accessible design features described in tool A3.

Detailed guidance may be found in the *Pedestrian Crossing Control Manual for British Columbia*, the *TAC Pedestrian Crossing Control Guide*, the *TAC Geometric Design Guide for Canadian Roads*, the *PCMP Design Guidelines*, and the *NACTO Urban Street Design Guide*.

## C. Bicycle Facilities

**What is it?** Bicycle facilities provide a safe and comfortable environment in which to ride a bike.

**What issue(s) does it address?** The key issue bicycle infrastructure addresses is providing a safe place for cycling that is separated from major vehicle traffic. Different types of bicycle infrastructure may also help to reduce vehicle speeds and volumes, thus creating a comfortable street for all users. Motorists may also benefit from cycling infrastructure, resulting in improvements to the flow of traffic and reduced the risk of collisions.

### **When should it be considered?**

- A network of safe cycling facilities spaced a minimum of every 500 m should ensure that cyclists will use the facilities.
- Several types of bicycle infrastructure options are intended for larger streets with higher traffic volumes (e.g. arterial, collector, and special roads).

**C1. Protected Bicycle Lane:** A protected bicycle lane provides space that is intended to be exclusively for bicycles, and is separated from motor vehicle travel lanes, parking lanes, and sidewalks. In situations where on-street parking is allowed, protected bicycle lanes are located to the curb-side of the parking. The lane may be one-way or two-way, and may be at street level, at sidewalk level, or at an intermediate level. By separating cyclists from motor traffic, protected bicycle lanes can offer a higher level of security than bike lanes and are attractive to a wider spectrum of the public. Protected bicycle lanes should be considered on all arterial and special roads designated as recommended bicycle routes.

**C2. Bicycle Lane:** A bicycle lane is a portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. A bicycle lane is distinguished from a protected bicycle lane in that it has no physical barrier (bollards, medians, raised curbs, etc.) that restricts the encroachment of motorized traffic. They may be paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Since bicycle lanes i) require ongoing enforcement to prohibit motorized vehicle encroachment and double-parking, ii) provide a lower degree of security than protected bicycle lanes, and iii) are not attractive to a wide spectrum of the public, they are not recommended as a replacement for infrastructure (i.e. a protected bicycle lane) except on collector roads and with a thorough consideration of existing traffic levels and behaviors, and enforcement.

**C3. Shared Lane:** Shared lane markings or “sharrows,” are road markings used to indicate a shared lane environment for bicycles and automobiles. Sharrows reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and may be configured to offer directional and wayfinding guidance. However, research suggests that this type of pavement marking is poorly understood and associated with a low level of security for bicycles. Therefore, sharrow markings are not recommended on busy streets as a replacement for infrastructure.

## When should it be considered? (cont.)

**C4. Bicycle Greenway:** Bicycle greenways are streets designed for vehicle travel speeds of less than 30 km/h and daily traffic volumes of less than 500 vehicles per day (achieved through the traffic-calming measures described in tools D1-D2), so as to give bicycles travel priority. Bicycle greenways use signs and pavement markings to provide wayfinding for bicyclists along the route; at locations where a bicycle boulevard crosses a major street with right-of-way priority, a variety of measure to improve visibility and reduce delay for bicyclists are provided. Bicycle greenways should be considered on Collector and Local roads designated as recommended bicycle routes.

- Interim protected bicycle lanes or bicycle greenways should be considered to increase cyclist confidence and safety in the near-term, as well as to plan and test protected bicycle lanes and traffic calming in advance of full reconstruction. Paint, planter beds, bollards, and parking may be used to temporarily create a protected bicycle lane or street closures (tool D1).
- Highest priority areas for street enhancement include:
  - Routes indicated on the CRD Primary Inter-Community Bicycle Network (CRD PCMP Map 8); and
  - Routes indicated on the Oak Bay Active Transportation Strategy Recommended Trail and Bicycle Network (Map 3).

**Design Considerations.** Bicycle facilities must include intersection treatments and signalling as appropriate to ensure continued protection and comfort of cyclists through intersections. Designs for intersections with bicycle facilities should reduce conflict between bicyclists (and other vulnerable road users) and vehicles by heightening the level of visibility, denoting a clear right-of-way, and facilitating eye contact and awareness with competing modes.

The configuration of a safe intersection for bicyclists may include elements such as color, signage, medians, signal detection, and pavement markings. The level of treatment required for bicyclists at an intersection will depend on the bicycle facility type used, whether bicycle facilities are intersecting, the adjacent street function and land use.

Traffic calming tools that may be used to create bicycle greenways with low traffic speeds and volumes are designated in tools D1-D2.

A bicycle wayfinding system is useful in to guiding bicyclists to their destinations along preferred bicycle routes. Guidance on planning and developing bicycle wayfinding signage is provided by the *CRD Cycling Destination Wayfinding Guidelines*.

Additional detailed guidance may be found in the *PCMP Design Guidelines*, the *NACTO Urban Bikeway Design Guide*, the *CROW Design Manual for Bicycle Traffic*, the *TAC Geometric Design Guide for Canadian Roads*, and the *TAC Bikeway Traffic Control Guidelines*.

## D. Traffic Calming

**What is it?** Traffic calming is the combination of measures that reduce the negative effects of motor vehicle use, alter driver behavior to reflect intended driving habits, and improve conditions for non-motorized street users.

**What issue(s) does it address?** Traffic calming is best applied as a series of features that work in coordination with one another to address a known or anticipated neighborhood issue of vehicle speeds or traffic volumes. It also helps to reduce conflicts and create a positive walking and cycling environment.

### When should it be considered?

- Traffic calming should be considered on roads with a known or anticipated issue of vehicle speeds or traffic volumes.
- Traffic calming should be employed in the development of bicycle greenways, as part of a comfortable “all ages and abilities” bicycle network.

**D1. Traffic Volume Management** is generally intended to divert non-local traffic onto more appropriate streets and discourage short-cutting on Local streets with obstructions that restrict certain vehicle movements. Measures are typically used at intersections but may also be used mid-block.



**Full Closure:** A barrier extending across the entire width of a roadway, which obstructs all motor vehicle traffic movements from continuing along the roadway. Closures may be considered on Local streets.

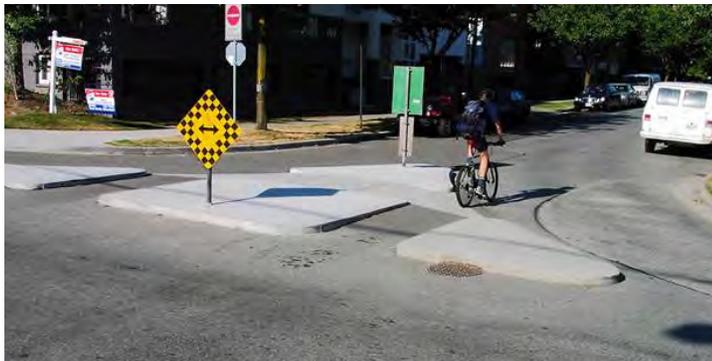


**Directional Closure:** A barrier extending across a roadway prohibiting one direction of traffic. Closures may be considered at the intersections of Local and Arterial roads.

When should it be considered? (cont.)



**Diverter:** A barrier placed diagonally across an intersection forcing vehicles to turn. Diverters could be considered on Local and Collector streets.



**Intersection Channelization:** Raised islands located in an intersection to obstruct specific traffic movements and physically direct traffic through an intersection. Channelization may be considered where Local or Collector streets meet Arterial roads, especially along bike greenways.



**Raised Median through Intersection:** An elevated median located on the centreline of a two-way roadway through an intersection, which prevents left turns and through movements to and from the intersecting roadway. Criteria for consideration for a raised median through intersection are the same as for intersection channelization.



**Right-in, Right-out Island:** A raised triangular island at an intersection approach that obstructs left turns and through movements. Criteria for consideration for a right-in, right-out island are the same as for intersection channelization.

## When should it be considered? (cont.)

**D2. Traffic Speed Management** is generally intended to require a motorist to slow in order to avoid unpleasant sensations due to variation in road surface level or to navigate a lateral shift in the laneway. The crosswalk measures described in tool B3, which also provide speed reduction (i.e. refuge islands, raised crosswalks) provide the most benefit in many cases, as they slow vehicles at the critical point of potential conflict with pedestrians. Other measures include:



**Speed Hump:** A raised area of a roadway, which deflects both the wheels and frame of a traversing vehicle. Speed humps could be considered on local streets with lower speed limits, e.g. playgrounds and schools.

**Rumble Strips:** Raised buttons, bars or grooves closely spaced at regular intervals on the roadway that create both noise and vibration in a moving vehicle. Rumble strips could be considered on local and collector streets with steep slopes or where the visibility of a stop sign is limited.



**Raised Median Island:** An elevated median constructed on the centreline of a two-way roadway to reduce the overall width of the adjacent travel lanes. Medians should be used in conjunction with refuge islands (see tool B3).



**Traffic Circle:** A raised island located in the centre of an intersection, which requires vehicles to travel through the intersection in a counter-clockwise direction around the island. May be considered on local and collect streets that are not designated as bikeways or emergency access routes.

### When should it be considered? (cont.)

**On-street Parking:** Allowing parallel parking adjacent to the curb reduces roadway width and slows traffic. Parking may be restricted, however, in the vicinity of schools to provide a safe buffer space free of traffic caused by student pick-up and drop-off. Could be considered on local and collector streets.

**Speed Limit Reductions:** Require on-going enforcement to achieve compliance. Therefore, speed limits should only be reduced in conjunction with other traffic-calming measures.

- Interim traffic calming should be considered to address known issues related to traffic speeds and volumes in the near-term, as well as to plan and test traffic calming measures in advance of full reconstruction. Paint, planter beds, bollards, and parking may be used to temporarily address traffic calming.
- Highest priority areas for street enhancement include:
  - Local street routes indicated on the CRD Primary Inter-Community Bicycle Network (CRD PCMP Map 8).
  - Local street routes indicated on the Oak Bay Active Transportation Strategy Recommended Trail and Bicycle Network (Map 3).
  - Locations with a high use from school children, elderly pedestrians, or pedestrians with disabilities (e.g. schools, playgrounds, and other areas with lower speed limits).
  - Local streets within the CRD PCMP Pedestrian Priority Areas (Map 1).

**Design Considerations.** Bicycles and pedestrians should never be blocked or forced to merge into traffic as a result of traffic calming measures. Traffic-calming measures are intended to restrict motor vehicle traffic only.

Signage and technology (e.g. ‘traffic-calmed neighborhood’ sign, ‘through traffic prohibited’ sign, ‘turn prohibited sign’, radar speed message sign, in-ground lights) may be used to enhance traffic-calming. Signage guidance is provided by the *Manual of Uniform Traffic Control Devices of Canada* (MUTCD). Speed limits and parking regulations are defined by *Oak Bay Bylaw 4100*, (streets and traffic). Roadway and laneway widths are specified in *Oak Bay Bylaw 3578* (subdivision and development of land). Additional detailed guidance may be found in the *ITE Canadian Guide to Neighborhood Traffic Calming*, the *TAC Canadian Guideline for Establishing Posted Speed Limits*, and the *NACTO Urban Street Design Guide*.

## E. Bus Stops

To encourage transit ridership, the District is seeking to develop a well-designed network of bus stops for passengers to wait for, board, alight, and transfer between buses. Bus stops will be designed for accessibility, safe waiting and alighting, visibility for approaching buses, and comfortable conditions with places to sit and weather protection where possible.

Two basic types of bus stops are installed in Oak Bay - Basic Stops and Enhanced Stops. Each is described below.

### E1. Basic Stop

**What is it?** A basic bus stop includes the features required to identify it as a bus stop - sign post with ID sign and a painted red curb. A suitable wheelchair pad should be provided in the boarding/alighting area and pedestrian access should be deemed accessible. Additional passenger amenities may be considered (shelter, bench, garbage bin, etc.) but are not required.

**What issue(s) does it address?** Basic bus stops allow for safe, accessible transit access at locations of limited boarding / alighting.

#### When should it be considered?

- Basic bus stops are generally sufficient on the Local Transit Network, as defined by the *Victoria Region Transit Future Plan*.
- Stops should be in close proximity to an origin or destination for transit trips, spaced no less than 200m and no more than 700m apart.
- Stops at the “far side” of an intersection are preferable to stops at the “near side” or mid-block.
- Stops on hills should be avoided where possible, and, where necessary, grades must not exceed 8%.

### E2. Enhanced Stop

**What is it?** An enhanced bus stop includes the elements of a basic bus stop, but with additional passenger amenities to support the greater volume of boardings / alightings. Amenities should include a shelter (or nearby weather protection), seating, garbage bin and lighting. Consideration may also be given to placemaking features (tools F1 - F3). Enhanced bus stops may also be placed on a bus bulb (see tool B2).

**What issue(s) does it address?** Enhanced bus stops provide a more pleasant and comfortable transit experience, in particular for elderly transit riders.

#### When should it be considered?

- Enhanced bus stops should be considered at locations that meet the minimum criteria for a basic stop, and in addition, are located along the Frequent Transit Network (*Victoria Region Transit Future Plan*), and/or locations with a high use from seniors.
- Highest priority areas for street enhancement are on the CRD *PCMP Pedestrian Priority Areas* (Map 1).

**Design Considerations.** Bus stop placement criteria and design standards are provided by the *BC Transit Infrastructure Design Guidelines*.

Link: <http://bctransit.com/servlet/documents/1403640670226>

## F. Placemaking

Placemaking brings life and amenities to public spaces. It involves strengthening the connection between people, and the places they share. Through collaborative processes, people are re-imagining everyday spaces, to see anew the potential of parks, waterfronts, plazas, neighborhoods, streets, campuses and public buildings in fostering successful social networks.

Streets are often the most vital, yet under-utilized public spaces in communities. In designing streets to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities, the District of Oak Bay is already building a sense of place for its residents. This section describes additional measures that can be undertaken to green and beautify the community while introduce an element of fun and play, creating places where people will linger and enjoy their community. It is important to note that placemaking projects should be rooted in public participation in order to create a sense of community ownership.

### F1. Street Tree + Plantings

**What is it?** Street trees and plantings may be incorporated into the urban landscape, especially on curb extensions, and within the frontage, street furniture, and buffer zones of sidewalks. Plantings may also be used to create protected bicycle lanes.

**What issue(s) does it address?** Trees and plantings beautify the street, create a sense of place, improve the walking and cycling environment, calm traffic, reduce heat island effects, and improve air quality. Their main application, however, is in managing stormwater. Conventional stormwater management infrastructure has been designed to move the largest volume of water from a site as quickly as possible. Sustainable stormwater management captures water closer to the source, reducing combined sewer overflows, ponding, and roadway flooding, improving water quality, mitigating peak flow rates after a storm event, and relieving the burden on municipal waste systems. Sustainable stormwater management can prove less costly than upgrading large sub-grade pipe networks, and allows for flexible, modular installation.

#### When should it be considered?

- Partial or full infiltration of the native soils should be considered; infiltration facilities should only be located on Class A or B soils.
- Slope, soil conditions, and location within the watershed could be assessed by a Geotechnical Engineer.
- Trees and plantings must be appropriate for the local climate and should require minimal maintenance.

**Street Trees:** Street trees provide shade for pedestrians during the summer months, and reduce vehicle speeds. The preservation of mature trees is specified in Bylaw 3578 (subdivision and development of land). New street trees should be considered as part of sidewalk expansion projects, and should be selected to minimize the impact of their roots on the integrity of the sidewalk structure.

**Bioswales, Flow-through Planter, and Pervious Strips:** These features provide stormwater management with flexible siting requirements, and should be considered as part of new curb extensions, sidewalk extensions, and protected bicycle lanes.

**Pervious Pavement:** Pervious pavement effectively treats, detains, and infiltrates stormwater runoff where landscape-based strategies are restricted or less desired. Pervious pavements have multiple applications, including sidewalks, street furniture zones, parking, and entire roadways.

- Highest priority areas for street enhancement include:
  - The CRD PCMP Pedestrian Priority Areas (Map 1)
  - Arterial roads and special roads
  - BC Transit bus routes

**Design Considerations.** Projects may be coordinated with sidewalk widening, curb extensions, refuge islands, protected bicycle lanes, traffic barriers, and bus stops to maximize amenity. Plantings and trees should not obstruct the pedestrian through zone of the sidewalk, or impede accessibility for those with disabilities. Additional detailed guidance may be found in the NACTO *Urban Street Design Guide*.

## F2. Lighting, Street Furniture and Public Art

**What is it?** Lighting, benches, newspaper kiosks, bicycle parking, and public art installations enhance the urban landscape, and may be incorporated as part of street design.

**What issue(s) does it address?** Lighting helps to improve safety and enhance the pedestrian environment at night. Benches encourage people to linger and enjoy their communities, while significantly increasing the comfort and safety of elderly pedestrians, by providing them a place to rest along the way. Bicycle parking helps to ensure that cyclists will have a safe and orderly place to leave their bicycles at the end of their trip, and will discourage bicycles from being locked to other infrastructure in the absence of secure parking. Public art installations beautify the street and help to infuse a sense of the character of the community into the urban landscape.

**Design Considerations.** Lighting should be established as per the *TAC Guide for the Design of Roadway Lighting*. The International Dark Sky Association provides guidance on minimizing light pollution. Additional detailed guidance may be found in the *NACTO Urban Street Design Guide*.

### When should it be considered?

- Street furniture installations should be considered as a part of sidewalk widening projects, or wherever sidewalks are wide enough to include a street furniture zone in addition to the pedestrian through zone.
- Benches should be considered on arterial and special roads with a grade exceeding 3%.
- As per *Bylaw 3578* (subdivision and development of land), street lighting shall be designed, constructed and installed in accordance with the *TAC Guide for the Design of Roadway Lighting*, provided that the design of lamp standards shall be suited to the character of the area in which the subdivision is located.
- Highest priority areas for street enhancement include:
  - The CRD PCMP Pedestrian Priority Areas (Map 1)
  - Arterial roads and Special roads

### F3. Celebration + Temporary Installation

**What is it?** Parklets and interim public plazas temporarily re-allocate roadway space for public seating. Temporary street closures provide the opportunity for on-street celebrations.

**What issue(s) does it address?** Short-term street closures and installations provide Oak Bay the opportunity to make the most efficient use of valuable street space, and increase the vibrancy of a street and the broader community. Parklets, public plazas, and street closures serve as a gathering place for the community and can energize and showcase local stores and shops. An interim measure can serve as a bridge to the community, helping to build support for a project and test its value prior to full reconstruction.

**Design Considerations.** Additional detailed guidance may be found in the NACTO *Urban Street Design Guide*.

#### When should it be considered?

- **Parklets** are public seating platforms that convert curbside space (often parking) into public space. Most parklets include seating, greenery and/or bike racks, and accommodate unmet demand for public space on commercial retail streets. Parklets are typically applied where narrow or congested sidewalks prevent traditional sidewalk cafes or where local property owners or residents see a need to expand the seating capacity and public space on a given street.
- **Temporary Street Closures** restrict a street to pedestrians, and in some cases bicyclists, rollerbladers, and skateboarders at specific times of day, days of the week or seasonally. Temporary streets closures demonstrate the range and diversity of ways that a street may be utilized and can activate the street and showcase participating businesses and communities.
- **Interim Public Plazas** transform under-utilized areas of roadway into public spaces for surrounding residents and businesses. Using low-cost materials, such as epoxied gravel, movable planters, and flexible seating, interim public plazas reconfigure and revitalize intersections that might otherwise be unsafe or under-utilized. Interim public plazas are typically applied where an under-utilized street segment has low vehicle traffic, pedestrian demand is unmet, and foot traffic is overflowing into the roadway, or where safety or operational issues with existing traffic call for a temporary reconfiguration of the intersection.
- Highest priority areas for street enhancement include:
  - The CRD *PCMP Pedestrian Priority Areas* (Map 1)
  - Arterial roads and Special roads
  - BC Transit bus routes



# Terminology

**Accessibility.** The degree to which a building or infrastructure can be used by all people, including those with physical, sensory, or cognitive disabilities.

**Bicycle Greenway** Also known as bicycle boulevard

**Bicycle Lane.** A bicycle Lane is a portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists.

**Bioswale.** A vegetated area, usually lower than the surrounding area, used to retain and filter rainwater runoff.

**Character.** The distinct quality and appearance of a building or place that comes from a unique mix of defining physical and social attributes.

**Curb Extension.** Extension of the sidewalk into the parking lane to narrow the roadway and provide additional pedestrian space at key locations; they are designed to enhance pedestrian safety by increasing pedestrian visibility, shortening crossing distances, slowing turning vehicles, and visually narrowing the roadway.

**High-Occupancy Vehicle (HOV).** Vehicle carrying at least three occupants.

**ITE.** Institute of Transportation Engineers

**Multi-modal Transportation.** The provision and accommodation of a variety of transportation modes including, but not limited to, walking, cycling and transit.

**MUTCD.** Manual on Uniform Traffic Control Devices

**NACTO.** National Association of City Transportation Officials

**Parklet.** Sidewalk extension that provides more space and amenities for people using the street. Usually parklets are installed on parking lanes and use one or more parking spaces. Parklets typically extend out from the sidewalk at the level of the sidewalk to the width of the adjacent parking space.

**PCMP.** Pedestrian and Cycling Master Plan

**Protected Bicycle Lane.** A bicycle lane that is physically separated from motor vehicle traffic by some combination of raised medians, planters, on-street parking, or bollards to offer a cycling experience that is safer and more comfortable than standard bicycle lanes. Also known as a “Cycle Track”.

**Public Right-of-Way.** The public space dedicated to the municipality for transportation and utility use; it includes the road and sidewalk and extends to the adjacent property line.

**Sharrow.** Shared lane markings used to indicate a shared lane environment for bicycles and automobiles. Sharrows are commonly located where cyclists are expected to position themselves in the lane.

**Single-Occupant Vehicle (SOV).** Vehicle carrying one occupant (i.e. the driver).

**Streetscape.** The visual elements of a street, including the road, adjoining buildings, trees and vegetation, open spaces, lighting, and street furniture that combine to form the street's character. In Oak Bay, the trees and landscape are the dominant elements of many of the streets.

**Stormwater Management.** Comprehensive approach to rainwater management that plans for a range of rainfall events, not just large storm events. Guiding principles of an integrated strategy are that: rain from frequent small events be allowed to infiltrate the ground, and runoff from heavy events should be retained and slowly released,

**Traffic Calming.** Refers to engineering and urban design measures used to slow down the flow of traffic and create safer and more comfortable streets for pedestrians, cyclists and adjacent residents.

**TAC.** Transportation Association of Canada

**Transportation Demand Management (TDM).** A tool used to encourage new transportation patterns. TDM plans and strategies include education, incentives and disincentives, and travel options to support walking, cycling, ride-sharing and transit.

**Universal Design.** Design intended to accommodate all people, with particular attention to meeting the needs of those with physical, sensory, or cognitive disabilities.

**Walkability.** The extent to which an area is safe, comfortable and accommodating for pedestrians and cyclists.

Appendix A

Resident Request Form

CURRENTLY BEING DEVELOPED

Appendix B

## Summary of Existing Policy

### CRD Pedestrian and Cycling Master Plan, 2011

In 2011, the Capital Region completed its Pedestrian and Cycling Master Plan, which set out a vision of the Capital Region as a truly livable and environmentally sustainable community, where walking and cycling are key components of an innovative and integrated transportation system. It further envisions that citizens of all ages in all parts of the region will find active travel irresistible on a seamless network of Class I on- and off-street facilities appropriate for users of all abilities, and that in 2038, the CRD will be lauded for its mode share for cycling of 25% in urban areas and 15% region wide and 15% mode share for pedestrian travel.

### CRD Regional Transportation Plan, 2014

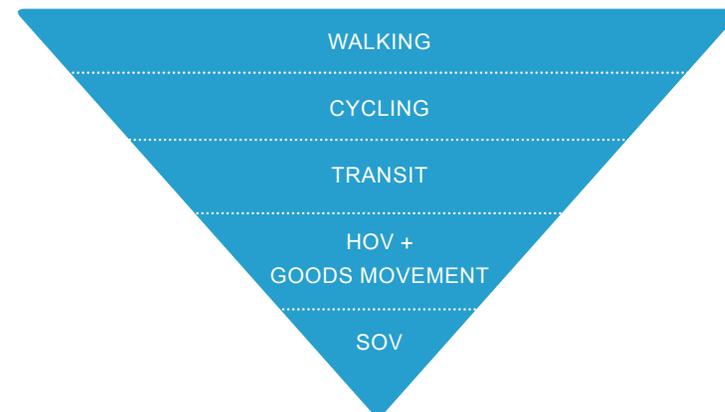
In 2014, the Capital Regional District Board approved a Regional Transportation Plan (RTP), which will guide transportation planning and development in the Capital Region over the next 25 years. The RTP identifies a desired Regional Multi-modal Network (RMN), outlines actions that will facilitate its ongoing development and details the required governance and funding mechanisms. It also identifies Recommended Regional Multi-modal Network Goods Movement Priority Corridors, which include Foul Bay Road, Oak Bay Avenue, Henderson Road, and Cedar Hill Cross Road. Once implemented, the plan will help to create a transportation network that provides travel choices and supports smart growth and livable communities.

### Oak Bay Active Transportation Strategy, 2011

In 2011, The District of Oak Bay developed an active transportation strategy which set forth recommended actions for the District to facilitate increased demand for active transportation in the future. The primary recommendation was to work toward an envisioned long-term active transportation network comprised of routes and facilities that facilitate active transportation.

### Oak Bay Complete Streets Policy, 2012

In 2012, Oak Bay Council adopted the Complete Streets Policy, which states that roads and pathways are a community resource for the benefit of all. They increase opportunities for interaction among residents and businesses, and therefore shall be designed and executed to accommodate and encourage safe access and use by pedestrians, cyclists, and motorists. Decisions regarding transportation priorities and infrastructure improvements and spending should be guided by the following hierarchy of transportation and accessibility priorities:



## Oak Bay Official Community Plan, 2014

In 2014, The District of Oak Bay approved its Official Community Plan (OCP). The transportation objectives of the OCP include:

1. Design and operate roads in villages as “complete streets” with all users in mind, including pedestrians of all ages and abilities, vehicles, cyclists, transit, and motor scooters.
2. Improve sidewalks for better accessibility, especially in commercial and high-use locations.
3. Address the safety of the road network through management of speed and road improvements.
4. Provide more and safer options for commuter and recreational bike routes and infrastructure.
5. Advocate for improved transit services.
6. Address needs for access to commercial areas and recreation centres.
7. Reduce noise and air quality impacts.