SQUAMISH

Downtown Public Realm and Streetscape
Design Guidelines

2. GENERAL GUIDELINES

Provides maps and guideline direction on various topics related to Downtown Squamish streetscape design considerations.

2.1 CORNER PLAZAS & MID-BLOCKS

Downtown Squamish has undeveloped or vehicle-focused intersections with long north-to-south blocks. Intersection revitalization and new mid-block connections should be supported through redevelopment to create a vibrant, activated and inclusive public realm and pedestrian-focused Downtown.

Redevelopment Downtown should be pedestrian oriented, supporting corner plaza areas and mid-blocks.

Figure 2.1.1) Corner plaza.

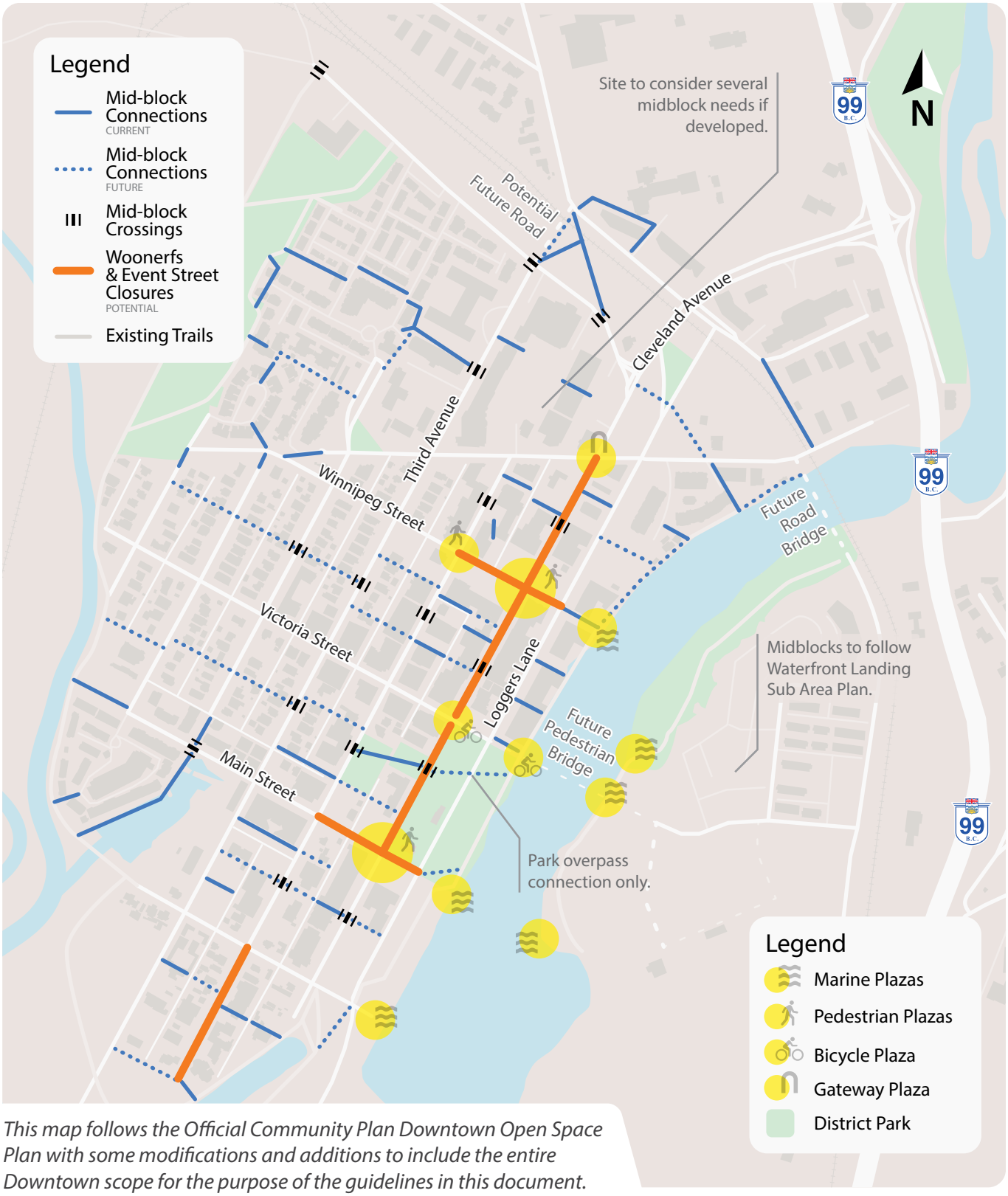
Figure 2.1.2) Residential mid-block on one property

OCP GUIDING POLICY

Downtown Squamish	16.2 a & c
DPA 3: Universal Guidelines	36.5 f & g, 36.14 a
DPA 4: Gateway	37.5 a
DPA 5: Commercial Centre	38.5 a, 38.10 b, c, 38.12 a, b, & c
DPA 6: Mamquam Blind Channel	39.4 b & d, 39.6 b
DPA 7: Downtown South	40.8 e & f

CORNER PLAZAS & MID-BLOCKS

PLAZA & PEDESTRIAN MAP



This map follows the Official Community Plan Downtown Open Space Plan with some modifications and additions to include the entire Downtown scope for the purpose of the guidelines in this document.

CORNER PLAZAS & MID-BLOCKS

2.1.1 CORNER PLAZAS

Corner Plazas are typically located on high streets and at key intersections within Downtown Squamish and identify locations to support increased public realm interest and activation. Corner Plazas help to activate key intersections for commercial and pedestrian activity, through increased urban open space, seating, patios, street trees, sightlines, public art and viewscapes. Corner Plazas can have specific themes to match the various land use needs Downtown.

2.1.1 CORNER PLAZA APPLICATION

a. The Winnipeg Street and Cleveland Avenue intersection pedestrian plaza should follow *Winnipeg and Cleveland Intersection Streetscape Design Guidelines* (Appendix A).

b. The Main Street and Cleveland Avenue intersection pedestrian plaza and Main Street plaza design between Cleveland Avenue and Loggers Lane should follow the *Main Street Plaza Design* (Appendix C).

c. Pemberton Avenue and Cleveland Avenue intersection gateway plaza should visually contribute to the arrival experience for people entering Downtown by all modes of transportation (e.g., gateway entrance sign, public art).

d. Second Avenue and Winnipeg Street intersection pedestrian plaza should create a pedestrian focused corner plaza that focuses on streetscape activation, seating and views to surrounding mountain viewscapes.

e. Marine corner plazas should be designed as key locations for seating, viewing, marine access, marine amenities, public art, wayfinding and site activation.

f. Victoria Street and Cleveland Avenue corner plaza should consider activation related to bicycle infrastructure (e.g., bike shelter, bike racks, bike art, wayfinding).

g. g. Integrate the District of Squamish Zoning Bylaw's *Visibility Corner* regulation into public corner plaza design and encourage expanded corner plaza space on private land for larger parcels adjacent to plazas noted on the *Plaza & Pedestrian Map.*

h. Secure public right of ways over publicly activated private land.

i. Corner plaza design should consider:

- **i.** Seating, trees and planting, patios, public art, streetscape furnishings, high-quality and interesting paving, lighting, and other features to activate the Downtown streetscape and provide a place for people to enjoy.
- **ii.** Overhead protection from the elements.
- **iii.** Wayfinding features or signage.
- **iv.** Capturing the uniqueness of each intersection such as specific views or a theme that can be mirrored on all corners.

CORNER PLAZAS & MID-BLOCKS

2.1.2 MID-BLOCKS

Mid-block connections are exterior public pedestrian routes at street level designed to provide safe, efficient and pleasing connections or short-cuts between long blocks. Mid-blocks can also help to provide breaks in continuous building massing, and opportunities for urban open space interest,activation, and viewscapes within a dense urban realm.

2.1.2 MID-BLOCKS APPLICATION

Downtown Squamish has large north-south blocks encouraging one to two east-west mid-blocks per block with the following recommendations:

a. One to two east-west mid-blocks per block within the Downtown Commercial Core land use area and one east-west mid-block per block within the other Downtown land use areas.

b. Mid-blocks between Cleveland Avenue and Loggers Lane and mid-block crossings along Loggers Lane are discouraged to support vehicle traffic flow through Loggers Lane. Pedestrian crossings of Loggers Lane should be concentrated at intersections or in special circumstances accommodated through overpasses.

c. Locations should be considered along property lines or existing pedestrian desire lines, to preserve, add or enhance pedestrian connections at roughly every 60 m. Mid-block locations should follow current and future Mid-block locations identified on the *Plaza & Pedestrian Map*.

d. Mid-block designs should consider *Streetscape Standard Section 3.4 Commercial Mid-block* and 3.6 *Residential Mid-block* design guidelines and consider:

- **i.** Include seating, landscaping, lighting, signage, and interactive public art or programming to animate mid-block connections.
- **ii.** Design mid-blocks with active edges, entrances, and commercial patios.
- **iii.** A minimum 2 m continuous public pathway should remain clear for pedestrian travel through a commercial mid-block.

e. Widths should be a minimum of 6 m along property lines (3 m half on each property) or 6-10 m within a large property to support sufficient ground floor activation, landscaping, public realm opportunity, and retail window activation per the BC Building Code spatial separation requirements.

f. Mid-blocks should remain open above, with support for cantilevered balconies, and walkway canopies. Elevated walkways between buildings or cantilevered buildings over the mid-block space to be considered where appropriate and should not extend more than 50% of the mid-block length and should be a minimum 5 m clearance height from the ground floor.

g. Public right of ways should be registered over private property, with strata maintenance agreements.

h. If designing a half mid-block (between properties), the first property to redevelop should provide a mid-block design for the entire width of the mid-block but should only construct their half. Future redevelopment should conform to the existing mid-block half design. Temporary design features or latecomers should be explored to address features that may be a combined benefit to both properties (e.g., drainage).

2.2 PATIOS, PARKLETS & MOBILE VENDORS

Downtown Squamish should support vibrant and activated streetscapes. Commercial patios, public parklets and commercial mobile vendors should be supported within District road right of ways while ensuring the streetscape still offers accessible sidewalks, bike lanes and access to parking.

Downtown Squamish supports the use of Downtown District Road Right of Ways for commercial and public activation.

OCP GUIDING POLICY

Downtown Squamish	16.1 a
Downtown Public Realm	16.6 a, b, e
Downtown Transportation	20.11 a
Equity & Inclusion	25.4 b

POLICY & REGULATION

District of Squamish Zoning Bylaw No. 2200, 2011

- Portable Food Vending
- Temporary Commercial Vending
- Outdoor Dining Patio Regulation

District of Squamish Business Licence Bylaw No. 2455, 2016

- Outdoor Dining Patio Regulation
- Portable Food Vending Regulation

PATIOS, PARKLETS & MOBILE VENDORS

PATIOS

Commercial Patios can be located on private properties, streetscape boulevard areas and within street parking stalls.

See 2.2.1 Design, 2.2.2 Location and 2.2.3 Amount Application Guidelines. Information about Private Commercial Patio applications can be found at **squamish.ca/temporary-patio-permit**

Photo: Nicole Gurney

PARKLETS

Parklet's are public activation areas with seating open to public use without commercial purchase or profit.

See 2.2.1 Design, 2.2.2 Location and 2.2.3 Amount Application Guidelines. Information about Parklet applications can be found at **squamish.ca/temporary-patio-permit**

Photo: OurSquamish, Nina LaFlamme

MOBILE VENDORS

Mobile Vendors include temporary mobile retail or food sales that typically take place on private or public property.

See 2.2.2 Location and 2.2.3 Amount Application Guidelines. Inquiries regarding operating a Mobile Vendor on private property should be made to **businesslicence@squamish.ca**. Inquiries regarding operating a Mobile Vendor on District property and Downtown roadways should be made to **realestate@squamish.ca**

Photo: Nicole Gurney

PATIOS, PARKLETS & MOBILE VENDORS

2.2.1 DESIGN

2.2.1 DESIGN

Patios and Parklets should consider the following design guidelines:

a. Maintain a minimum 2.0 m continuous accessible sidewalk. Sidewalk width could be reduced to a minimum of 1.8 m at District discretion.

b. Patios and Parklets should not impede drainage. Structures placed in the curbside lane should maintain 0.4 m of clearance from the face of the curb to the structure to allow for drainage. Structures should not be located over storm drains unless permitted at District discretion.

c. Patio and Parklet enclosures such as a barrier, railing, screen or wall should not be higher than 1.2 m.

d. Permanent building canopies should have vertical clearance of minimum 2.6 m.

e. Patios and Parklets within parking stalls should be designed to accommodate adjacent parking stall use with the use of angled edges, barrier curb and MMCD standard reflectors at both roadside ends of the structure.

f. Patios and Parklets should be built of solid, durable materials and should reflect an aesthetic of permanency.

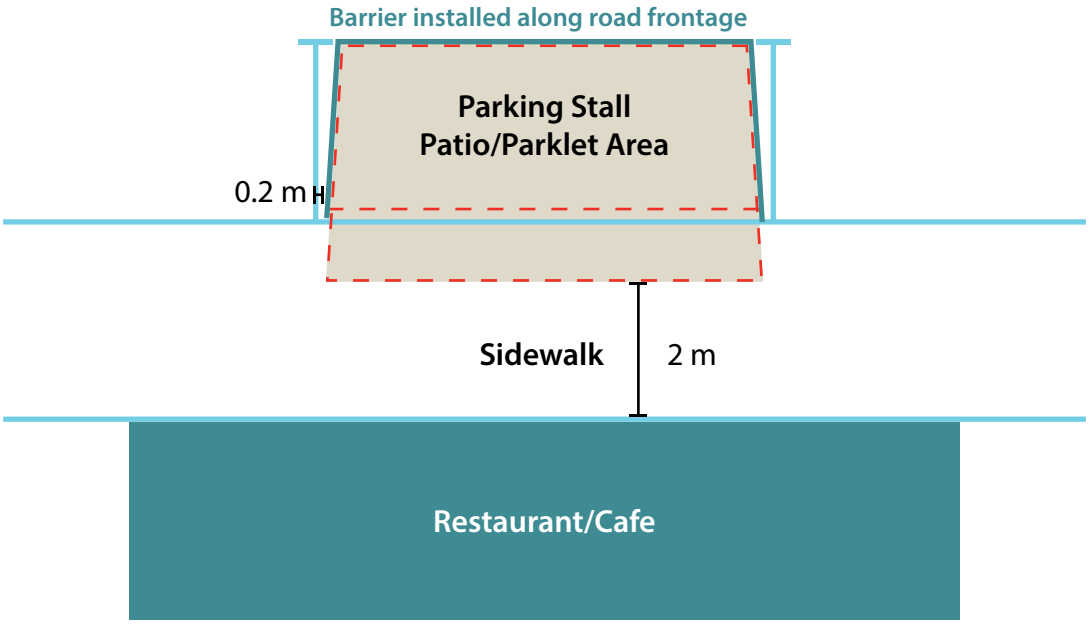
g. Patio and Parklet surfaces should be flush with adjacent surfaces next to the business, or otherwise meet accessibility standards. A non-slip surface is recommended.

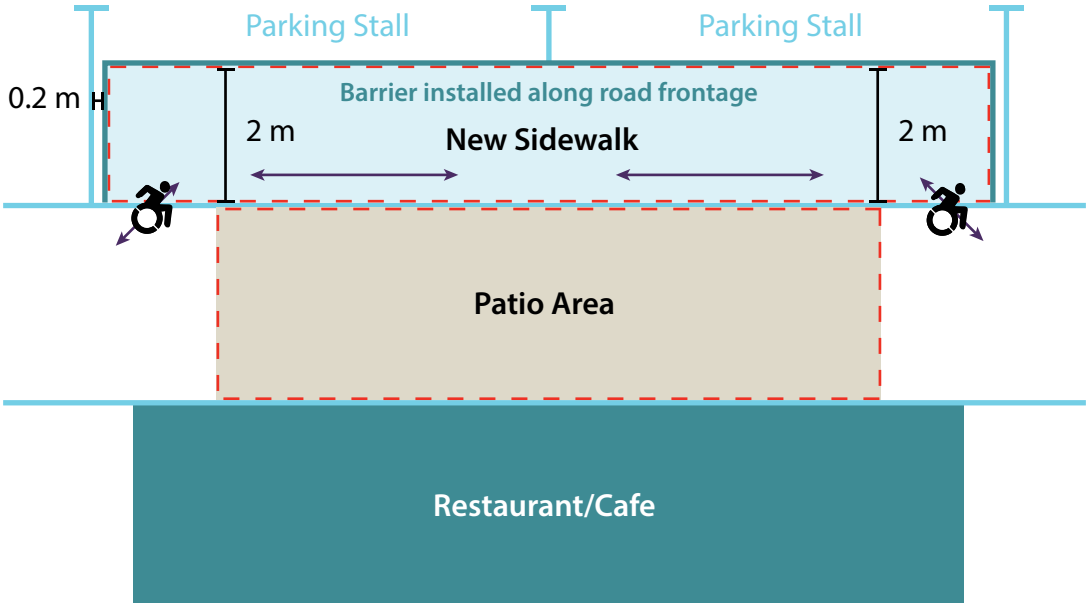
h. Patios and Parklets designs should consider landscaping, lighting, bike racks, canopies, awnings, umbrellas, waste, and/or heaters and consider the following:

- **i.** Landscaping should be included in the design, including watering considerations.
- **ii.** Umbrellas should not be attached to the patio railing or extend beyond the patio footprint to prevent obstructions for other streetscape users.
- **iii.** Heaters are supported in compliance with NFPA guidelines, and should not be located under umbrellas or awnings. Propane tanks not in use should be stored away from the streetscape in a vented outside structure in compliance with the BC Gas Safety Regulation.

PATIOS, PARKLETS & MOBILE VENDORS

PARKING STALL EXAMPLES





PATIOS, PARKLETS & MOBILE VENDORS

2.2.2 LOCATION

2.2.2 LOCATION

Patios, Parklets and Mobile Vendors should consider the following location guidelines:

a. Commercial private patios should be adjacent to the associated business and should only occupy a space as wide as the establishment frontage.

b. Parking stall patios, parklets and mobile vendors should be located adjacent to intersections and mid-block curb bump outs where possible.

c. Mobile vendors should be considered near corner plaza areas, parks, and public plaza areas and near District electrical connections to avoid generator nuisance.

d. Patios, Parklets and Mobile Vendors should not permanently impact, remove or alter streetscape surfaces, furnishings or landscaping. Any permanent alterations should be at District discretion and should sign a District Property Repair Agreement to reinstate original design and quality.

e. Parking stall locations should retain a minimum of two parking stalls between patios, parklets and mobile vendors or should have no parking stalls in between.

f. Accessible parking stalls should not be used or impacted by patios or parklets. Accessible stall and ramp relocations can be considered at applicant expense and at District discretion.

g. Mobile Vendors with cooking food production should follow NFPA guidelines and ensure appropriate 3 m spacing from buildings, vehicles and combustible materials.

2.2.3 AMOUNT

2.2.3 AMOUNT APPLICATION

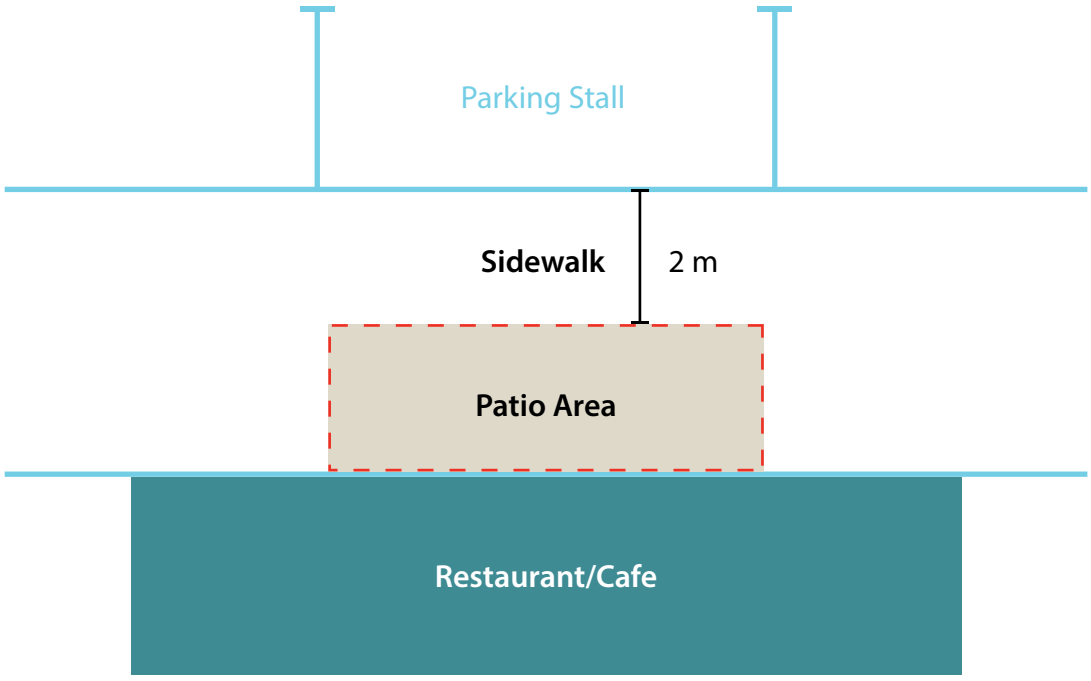
Patios, Parklets and Mobile Vendor within streetscape parking stalls should balance streetscape parking needs, with the following maximums recommended per block within the commercial core land use area at District discretion:

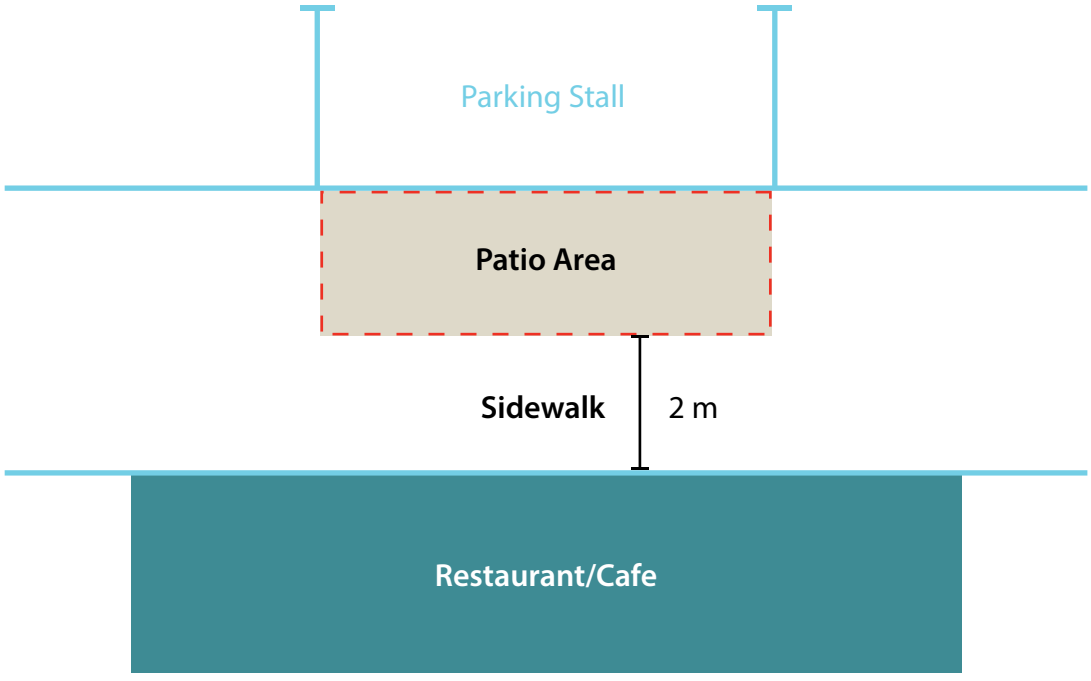
a. A maximum of six parking stalls used per north-south block.

b. A maximum of two parking stalls used per east west block.

PATIOS, PARKLETS & MOBILE VENDORS

SIDEWALK/BOULEVARD EXAMPLES





2.3 STREETSCAPE UNIVERSAL ACCESSIBILITY

Streetscape Universal Accessibility means a public realm design or furnishing that considers and promotes equity and inclusiveness and enables any person to perform activities independently and achieve equivalent results.

Downtown Squamish Streetscapes should be designed for everyone to be included without experiencing barrier to access.

OCP GUIDING POLICY

Active Transportation Infrastructure	20.17 a & e
Equity & Inclusion	25.2 a
Accessible & Age Friendly	25.5 a, 25.6 a & c

POLICY & REGULATION

District of Squamish Accessibility Plan (2024) for an Accessible Squamish

District of Squamish Streetscape Universal Accessibility Guidelines.

Photo: Pascale Gadbois

STREETSCAPE UNIVERSAL ACCESSIBILITY

2.3.1 STREETSCAPE UNIVERSAL ACCESSIBILITY

Approximately one in five people in Canada over the age of 15 are living with one or more disabilities. Despite the prevalence, North American environments and societies have historically been built primarily for able-bodied citizens leading to streetscape and public space designs that include several accessibility barriers.

Streetscape universal accessibility guidelines exist to help identify common barriers and provide design solutions to allow people with disabilities to fully participate independently in the public realm. Municipalities are moving towards including accessibility and universal design principals into municipal policy and regulation to ensure compliance.

The *District of Squamish Streetscape Universal Accessibility Guidelines* provides detailed design considerations specific to Squamish streetscapes and public spaces to promote a more inclusive and accessible public realm.

2.3.1 STREETSCAPE UNIVERSAL ACCESSIBILITY APPLICATION

a. Downtown streetscapes, parks and public spaces should conform to the *District of Squamish Streetscape Universal Accessibility Guidelines*.

b. New accessible stall locations should be considered Downtown in accordance with the *Parking Map*.

c. Downtown should support universal and accessible parks and public space designs.

d. Downtown should support accessible, pedestrian, bicycle, and transit infrastructure.

Photos: Pascale Gadbois

2.4 BICYCLE INFRASTRUCTURE

Downtown Squamish should support bicycle infrastructure to provide safe and efficient alternative modes of transportation offering alternatives to vehicle use and dependency.

Downtown Streetscapes should increase transportation choices within the Downtown community and provide an accessible, sustainable, and efficient transportation system for all users.

OCP GUIDING POLICY

Community Greenhouse Gas Reduction	19.3 c & d
Downtown Transportation	20.7 a
Active Transportation Infrastructure	20.17 b

POLICY & REGULATION

- Transportation Master Plan (2024)
- District of Squamish Active Transportation Plan (2019)
- Zoning Bylaw Section 4.42 Active Transportation Setbacks
- Subdivision and Development Control Bylaw Section 5 - ROADS
- British Columbia Active Transportation (BCAT) Design Guide (2019 Edition)
- Transportation Association of Canada (TAC) – Geometric Design Guide for Canadian Roads
- Master Municipal Construction Documents (MMCD).

Guideline documents may be subject to revision or amendments from time to time. Guidelines should reflect the latest guideline document.

BICYCLE INFRASTRUCTURE

BICYCLE INFRASTRUCTURE MAP

This map follows the Official Community Plan (2017) and Active Transportation Plan (2019) with recent changes to outline desired bicycle infrastructure designs for the purpose of the guidelines in this document.

BICYCLE INFRASTRUCTURE

2.4.1 PROTECTED BICYCLE LANES

Protected bicycle lanes are dedicated facilities for the exclusive use of people cycling and using other similar uses. Protected bicycle lanes provide vertical or horizontal physical separation from other vehicle and pedestrian road users and are distinct from painted or buffered bicycle lanes. Protected unidirectional bicycle lanes are proposed along Third Avenue, Victoria Street and Pemberton Avenue in Downtown Squamish as outlined on the *Bicycle Infrastructure Map*.

2.4.1 PROTECTED BICYCLE LANE APPLICATION

a. Protected bicycle lanes should be constructed for all development frontage upgrades or capital streetscape projects in compliance with the *Bicycle Infrastructure Map*.

b. Redevelopment of properties with frontages smaller than 31 m may construct protected bicycle lanes at District discretion with a cash-in-lieu alternative.

c. Large Rezonings with 40% frontage or more of a block should construct protected bicycle lanes for the entire block.

d. If sections of protected bicycle lanes are built on a portion of a block, access and exit points need to connect to the existing streetscape.

e. Generally unidirectional protected bicycle lanes should be a minimum of 1.8 m in width and bidirectional protected bicycle lanes should be a minimum of 3 m. All protected bicycle lane widths should meet BCAT guidelines and may be subject to different widths given location and context at District discretion.

f. Buffer zones should be included between protected bicycle lanes and adjacent vehicle or pedestrian infrastructure in compliance with the relevant streetscape standard and BCAT guidelines.

g. Buffer zones between bike lanes and drive aisles should consider planting narrow, low maintenance, irrigated and hardy plantings or planter boxes to provide vertical buffers and reduce hardscape where applicable and supported by District staff.

h. Protected bicycle lanes that cross major driveways, laneways, or intersections Downtown should provide separated crossing markings as recommended by BCAT guidelines, which include green painted lanes, bicycle symbol and cross-ride markings as illustrated in figure 2.4.1.

i. Protected bicycle lanes should include bicycle symbol and reserved use diamond symbol as recommended by TAC and BCAT and illustrated in figure 2.4.2. The bicycle symbol should:

- **i.** Point in the direction of travel with the diamond below it
- **ii.** Be placed at each approach to all crossings.
- **iii.** Be centred in the bicycle lane and spaced 75 m apart or as conditions dictate, and approximately 10 m downstream from an intersection or crosswalk.
- **iv.** Be used without the diamond for conflict markings, bicycle pathway crossings, or bicycle boxes.
- **v.** Include directional arrow markings where necessary.

j. Bidirectional protected bicycle lanes should include directional dividing lines that can be dashed to indicate where passing is permitted, and solid to indicate where passing is undesirable.

2.4.2 MULTI-USE PATHWAYS

Multi-use pathways are separated, off-street pathway facilities that are shared between people walking, cycling and using other forms of active transportation. These pathways are typically bidirectional and are a supported design for greenway corridors, along waterfronts, through parks or adjacent to roads and highways where vehicle crossings are minimal, road space is limited and shared use is desired. Multi-use pathways are commonly used throughout Squamish and typically provide protected active transportation pathways connecting to and from the Downtown as seen in the *Bicycle Infrastructure Map*. Once Downtown, multi-use pathways typically change into separated sidewalks and protected bicycle lanes due to increased crossing conflicts and user volumes.

2.4.2 MULTI-USE PATHWAYS APPLICATION

a. Multi-use pathways should be constructed for all development frontage upgrades or capital streetscape projects in compliance with the *Bicycle Infrastructure Map*.

b. Multi-use pathways outside of the typical road right of way should secure a minimum 5 m Right of Way to allow for pathway maintenance.

c. Generally, multi-use pathways should be a minimum of 3 m in width. All multi-use pathway widths should meet BCAT guidelines and may be subject to different widths given location and context at District discretion.

d. Multi-use pathway designs should support a minimum 1.5 m treed boulevard buffer between vehicle drive aisles and parking. Reduced buffer widths are at District discretions but should not be smaller than 0.6 m.

e. Additional clear width of 0.6 m should be provided on both sides of a multi-use pathway.

f. Multi-use pathways that cross major driveways, laneways, or intersections Downtown should provide a combined use cross-ride as recommended by BCAT guidelines, and as illustrated in figure 2.4.3. In some cases, a separated use cross walk and cross-ride may be recommended at District discretion.

g. Multi-use pathways should refer to BCAT guidelines when considering the use of yellow directional dividing lines with generally commuter pathways including dividing lines and symbols and recreational pathways having only symbols.

h. Multi-use pathways should include a multi-use pathway symbol as recommended by BCAT and illustrated in figure 2.4.4. The symbol should be placed every 50 to 100 meters, with symbols located at entrances, high conflict areas and tight corners.

i. Access control devises to restrict unauthorized motor vehicle use such as ridged bollards or control gates at entry points should be avoided unless there is demonstrated history or high likely hood of vehicle encroachment.

j. All multi-use pathways should include appropriate lighting in compliance with the District of Squamish Street Lighting Design Criteria.

BICYCLE INFRASTRUCTURE

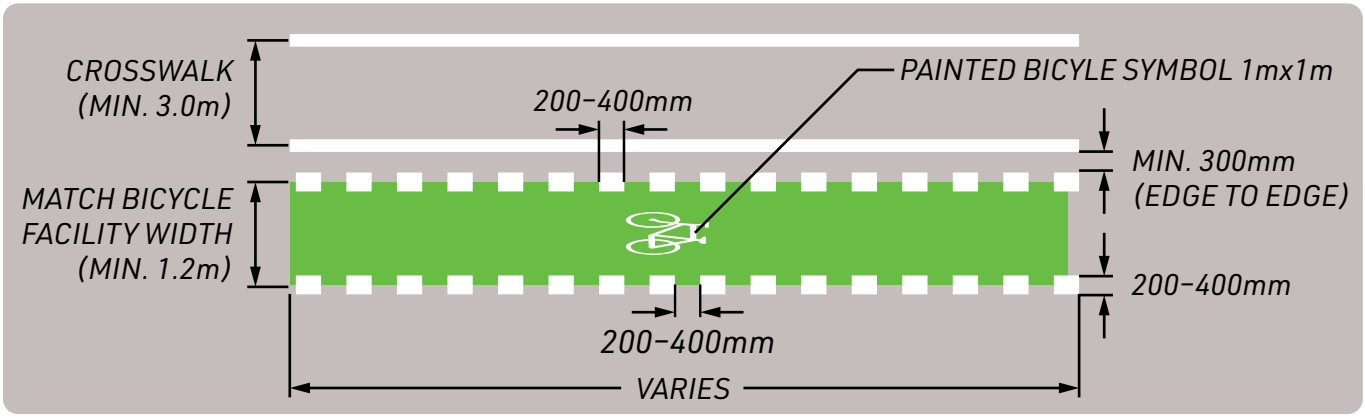


Fig 2.4.1) Separated crossing markings for cross walk and cross-ride for one way protected bicycle lanes. Image follows BCAT Design Guide (2019 Edition).

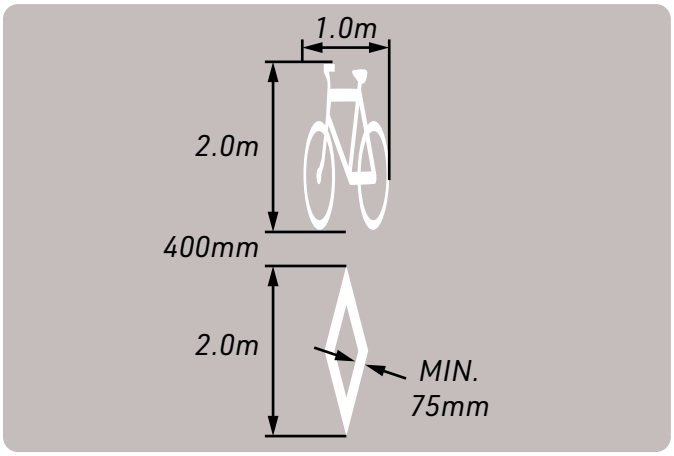


Fig 2.4.2) Protected Bicycle Lane Symbol within bicycle lane and a bicycle symbol at conflict zones.

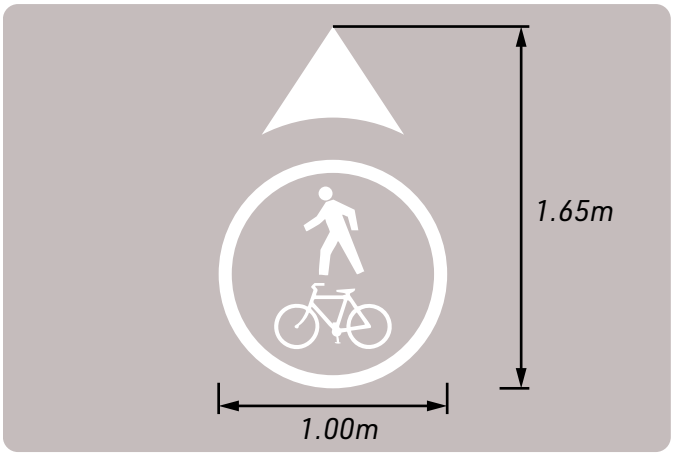


Fig 2.4.4) Multi-use pathways symbol.

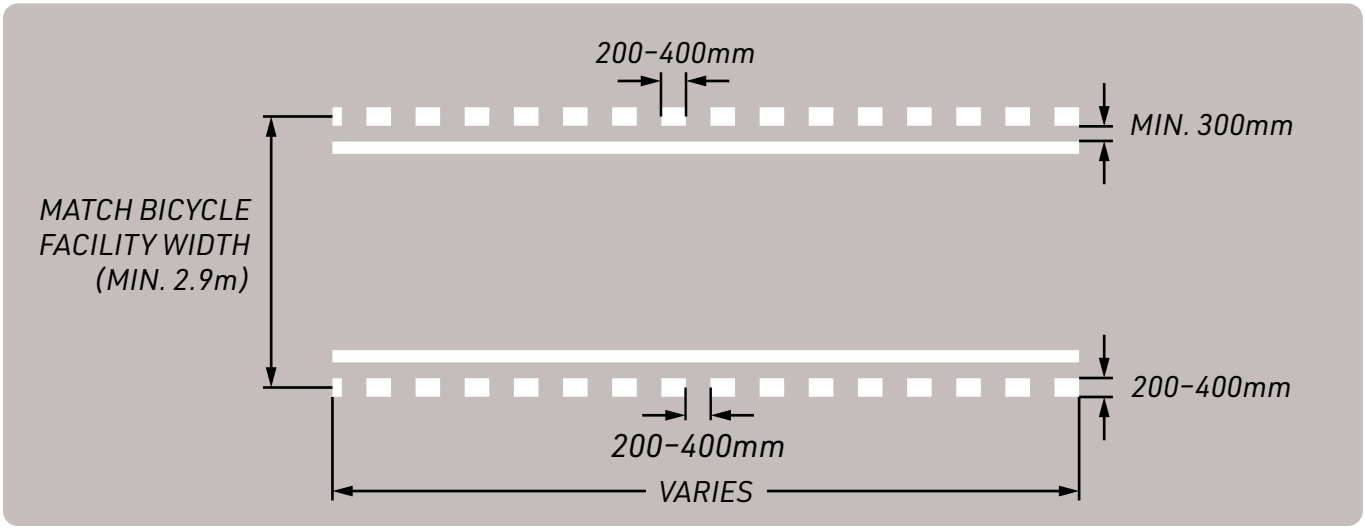


Fig 2.4.3) Combined use cross-ride.

2.4.3 BICYCLE FACILITIES DESIGN

There are several best practice and design guideline documents to reference when designing protected bicycle facilities. This section is designed to outline those documents and provide specific design considerations for Downtown Squamish.

2.4.3 BICYCLE FACILITY DESIGN APPLICATION

a. Bicycle facility design should align with BCAT current practice guidelines with supplemental reference to TAC and NACTO where applicable at District discretion.

b. Protected bicycle lane designs should include all appropriate cycling signage in line with TAC, BCAT and B.C. Provincial Sign Program sign codes.

c. Cross-rides (also known as elephant's feet and cross-bikes) are the bicycle equivalent of a crosswalks and should be used at all conflict zones to alert all street users of a bicycle crossing. Cross-rides consist of a series of white squares laid out in parallel lines across a street. They can be enhanced by adding the bicycle symbol and/or applying a green surface treatment.

d. Pedestrian movement across protected bicycle lanes should be marked with standard zebra crossing paint markings.

e. All bicycle facility pavement markings should be MMA or thermoplastic.

f. Protected bicycle lanes that connect through corner plaza areas should include cycling focused amenities, such as covered or uncovered bike racks, bike related public art, and interactive bike counters.

Photo: Nicole Gurney

2.5 TRANSIT ROUTE

Downtown Squamish is a main destination for regional and local transit users and should support transit infrastructure to provide safe and efficient alternative modes of transportation offering alternatives to vehicle use and dependency.

Downtown streetscapes and transit infrastructure should consider Squamish's current and future transit growth needs.

OCP GUIDING POLICY

Community Greenhouse Gas Reduction	19.3 c & d
Transit	20.20 c(i)

Photo: BC Transit

POLICY

- BC Transit On Street Infrastructure Design Guide
- BC Transits Transit Shelter Program
- BC Design Guide for Bus Stops Adjacent to Cycling Infrastructure (2024)

TRANSIT ROUTE

TRANSIT ROUTE MAP

This map is designed to show current and future transit routes and desired future transit hub location for the purpose of the guidelines in this document.

TRANSIT ROUTE

2.5.1 TRANSIT ROUTES

Transit service in Squamish is jointly provided by BC Transit, the District of Squamish and PWTransit. Currently, there are five year-round routes and one seasonal route, all of which connect to a single transit exchange Downtown. Expansion plans include a new Frequent Transit Network (FTN) connecting Downtown to Garibaldi Village. Once implemented, some routes will no longer connect to the Downtown exchange, however the overall frequency of buses travelling through the Downtown core is likely still to increase over time due to increased FTN trips and potential new connections to under-serviced areas near or in Downtown. Designing the Downtown streetscape to support transit today and for the future is an important consideration, particularly as the number of transit vehicles and riders increases over time.

2.5.1 TRANSIT ROUTES APPLICATION

a. All Transit routes (current or potential future) on the *Transit Route Map* should provide appropriate lane widths and intersection turning movements in accordance with the BC Transit *On Street Infrastructure Design Guide*. Generally, lane widths for Transit Routes Downtown should be:

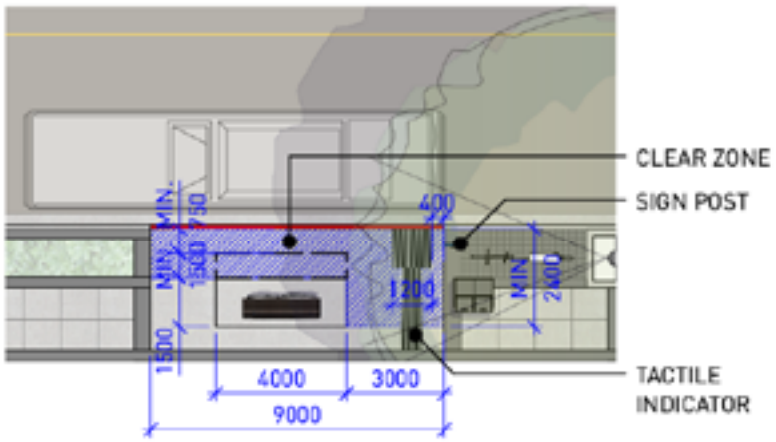
- **i.** A minimum of 3.3 m when adjacent to a 2.5 m parking area for a total of 5.8 m to curb face.
- **ii.** A minimum of 3.3 m when adjacent to an unbuffered or buffered bike lane.
- **iii.** A minimum of 3.3 m with a 0.3 m gutter when adjacent to a curb (excluding bike lanes) for a total of 3.6 m to curb face.

b. All potential future routes on the *Transit Route Map* are subject to District discretion.

c. Development at intersections along the current and future transit route identified in the *Transit Route Map* should conduct further detailed design review and improvements to ensure transit route movement.

d. School bus routes should use transit routes where possible. Some additional routes and intersections may require further review for school bus considerations at District discretion.

Fig 2.5.2) District of Squamish Streetscape Universal Accessibility Guidelines.



2.5.2 TRANSIT STOPS, SIGNS & SHELTERS

Transit stops, signs and shelters are important streetscape infrastructure to support transit use. Consistent transit signage and shelter design help to create cohesion and improve route finding amongst a diverse public realm. Shelters offer refuge from Squamish winds, rain and snow and should offer safe and inclusive places for people to sit while waiting for transit. As Downtown Squamish grows transit stops and shelters should be added or improved to meet transit infrastructure needs.

2.5.2 TRANSIT STOPS, SIGNS & SHELTERS APPLICATION

a. All transit stops Downtown should include a shelter, seating, signage, lighting and a public waste bin.

b. All transit stop designs Downtown should be universally accessible and should comply with the *District of Squamish Streetscape Universal Accessibility Guidelines (Fig. 2.5.2)* and the BC Transit *On Street Infrastructure Design Guide*.

c. All development along transit routes may be subject to adding or improving a transit stop or shelter at District discretion and should be secured at Rezoning or Servicing Agreement.

d. All transit shelters should comply with BC Transit's *Transit Shelter Program* TYPE 3 (T3) SERIES, (E3/E4) HARSH WEATHER SERIES and/or the District of Squamish Standard Transit Shelter specification (Section 4.2) with design type and details at District discretion.

e. Transit shelters should be designed and oriented to consider Squamish wind, rain and snow.

f. Perforated metal side and back panels are preferred for maintenance reasons. Glass panels may occasionally be considered due to concerns related to sightlines, CPTED or weather resistance at District discretion.

g. Transit shelter advertisements should be reserved for commercial areas only and applied at District discretion.

h. Transit shelter lighting should be wired, not solar.

i. Transit stops adjacent to bike lanes should be designed in conformance with BC's *Design Guide for Bus Stops Adjacent to Cycling Infrastructure*.

2.5.3 TRANSIT HUB

The District of Squamish recognizes that a transit hub should be located in Downtown Squamish.

2.5.3 TRANSIT HUB APPLICATION

a. Redevelopment within the future transit hub area should consider opportunities for a Transit Hub.

2.6 TRUCK ROUTE

A Downtown Truck Route Study was endorsed by Council in 2017 to ensure a safe and efficient downtown truck route that can support rising port and marine industrial activities, while balancing the needs of a growing Squamish community.

Downtown Streetscapes should be designed to support safe and efficient truck route movement.

OCP GUIDING POLICY

Major Transportation Network	20.1 a
Downtown Transportation	20.10 c

2.6.1 TRUCK ROUTE

In 2017, a Downtown Truck Route Study was completed and provided a number of short, medium and long term recommendations. Relevant recommendations related to Downtown Streetscapes are repeated below for application considerations.

2.6.1 TRUCK ROUTE APPLICATION

a. Street parking should be restricted along current and future trucks routes.

b. Development at intersections along the truck route identified in the *Truck Route Map* should conduct further detailed design review and improvements to ensure truck route movement.

c. Pavement quality should be appropriate for the truck loads along truck routes.

d. Maintain east-west stop controlled operations at unsignalized intersections along the truck route to allow free-flow operation for the north-south truck route traffic.

TRUCK ROUTE

TRUCK ROUTE MAP

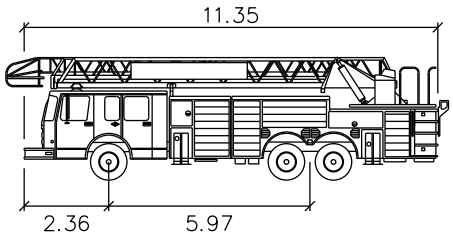
This map recreates the 2017 Downtown Truck Route Study map and includes turning movements for the purpose of this guideline document.

2.7 FIRE ROUTE

Downtown fire routes should be considered in intersection and street closure designs to find a balance between a vibrant, activated and pedestrian-focused Downtown while ensuring safe and efficient emergency response times.

2.7.1 FIRE ROUTE

Emergency response is an important aspect of streetscape design. A fire event generally requires a much faster response time as rapid escalation can result in severe damage and loss of life, making every minute of response time count. A pedestrian-focused Downtown tends to conflict with or provide barriers to fire response times. For example, curb bulges to reduce crossing distances and improve pedestrian safety can also constrain and constrict large fire truck movement. Pedestrian-only streets or closures for social and event purposes can create barriers to response time and reduced routing options. High streets with lots of commercial activity and mid-block crossing can create response time delays.



Squamish Aerial Fire

	meters
Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 42.0

The purpose of the *Fire Route Map* is to identify main routes for fire response and provide initial awareness of key intersections where fire truck design vehicle movement should be prioritized. Fire routes correlate with collector streets in the *Road Classification Map* and avoid conflicts with woonerf, plaza space corners or high street pedestrian conflicts in the *Plaza & Pedestrian Map*. The *Fire Route Map* is not a required route by fire response but a tool to ensure efficient emergency response is considered through the redevelopment of Downtown Squamish.

2.7.1 FIRE ROUTE APPLICATION

a. Complete street closures should not be supported on main fire routes outlined in the *Fire Route Map*, unless temporary and approved by the Fire Chief.

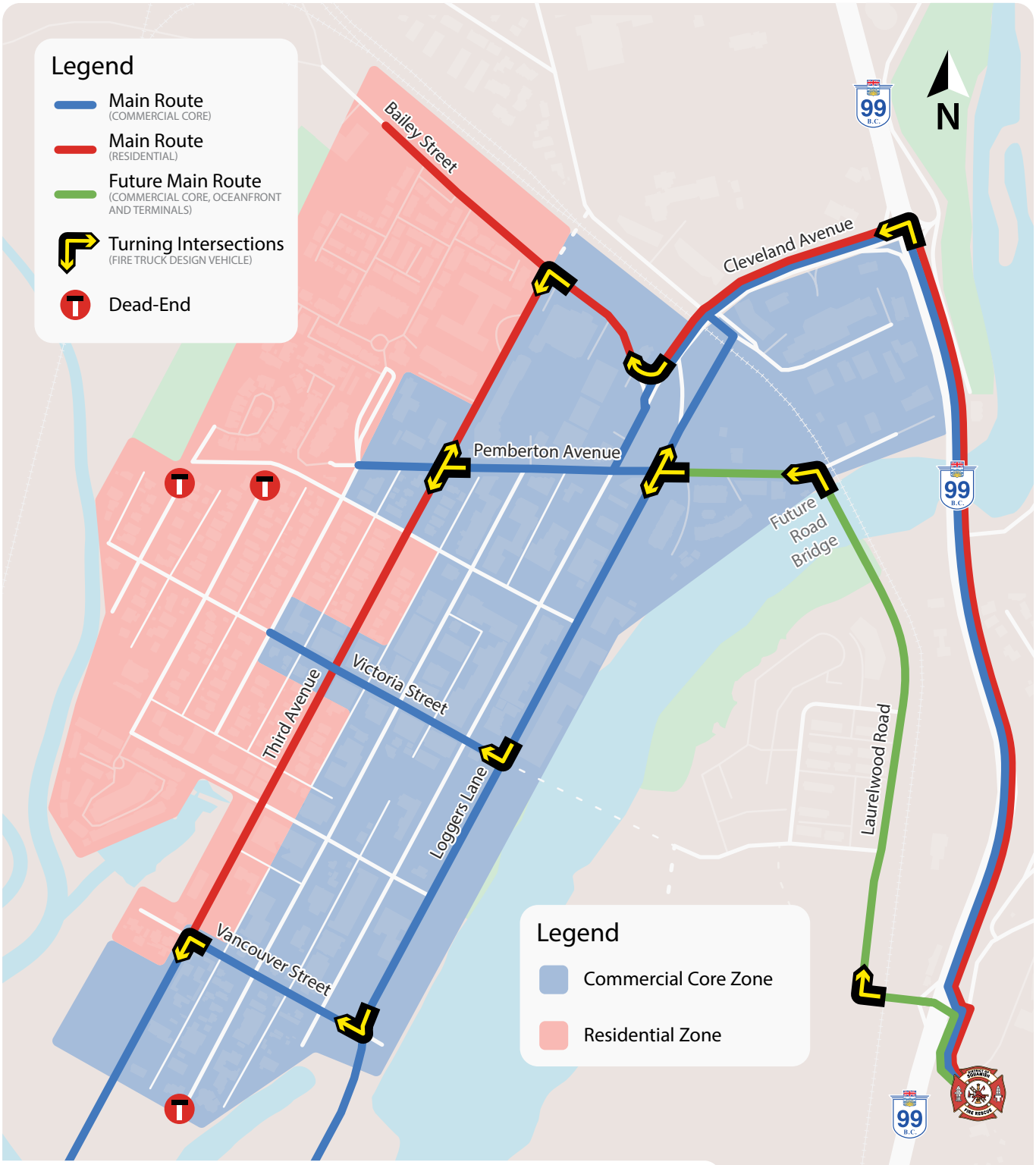
b. Development at intersections along the fire route identified in the *Fire Route Map* should conduct further detailed design review to ensure fire truck route movement is supported.

c. Fire turning movements identified at some intersection on the *Fire Route Map* should be designed to accommodate design vehicle movement of a Squamish Aerial Fire ladder truck. All other intersections should be for control vehicle movement.

d. Dead end streets Downtown can pose challenges to redevelopment and may require fire truck turn arounds to meet code requirements.

FIRE ROUTE

FIRE ROUTE MAP



This map identifies main response fire routes and provides initial awareness of key intersections where fire truck design vehicle movement should be prioritized.

2.8 PARKING

Downtown parking design and locations are changing with Downtown development and growth. As Downtown evolves, so should its on-street parking in consideration of a range of Downtown streetscapes needs.

On-street parking is a shared community asset and should support a range of needs and users in alignment with the overall transportation vision for Downtown.

OCP GUIDING POLICY

Trail Network	18.6 e
Downtown Transportation	20.11 a & b
Alternative Transportation Options	20.14 b
Accessible + Age-Friendly	25.6 c

POLICY & REGULATION

- Downtown Zoning Active Transportation Setbacks (Bylaw 2576, 2017)
- Downtown Parking Study 2017
- Downtown Parkade Study 2020
- Downtown Parking Study 2023
- Phased Parking Management Implementation Plan (2024-ongoing)

PARKING

PARKING MAP

This map provides guidance for where no on-street parking is designed for or expected for future streetscapes. It also provides guidance on where accessible stalls are currently located and where future stalls should be considered for the purpose of the guidelines in this document.

PARKING

2.8.1 ON-STREET PARKING

Downtown Squamish currently supports a range of on-street parking options; angled and parallel parking along curbs, and perpendicular and parallel parking along gravel shoulders. As Downtown redevelops, most private off-street parking and driveways should be accessed by rear laneways, allowing for more space on the street for on-street parking.

As some streets will need to prioritize truck routes, separated bike lanes, or stormwater bioswales, some streets will not be able to support parking on one or both sides of the street, and as a result removing some existing on-street spaces.

The District is currently undergoing a *Phased Parking Management Implementation Plan* to explore paid parking areas Downtown and evaluate on-street signage and residential parking pass areas. Streetscape redevelopment should consider any accessible spaces, signage, paint or pay parking infrastructure needed to support on-street parking in alignment with the latest Downtown Parking Study and Implementation Plan at District discretion.

2.8.1 ON-STREET PARKING APPLICATION

a. Angled parking should not be a supported design for on-street parking spaces. All current angled parking should be converted to parallel parking through redevelopment.

b. On-street parking design and location should comply with *Streetscape Standards (Section 3)* and the *Parking Map*.

c. On-street parking should include any signage, paint or pay parking infrastructure in alignment with the District's *Parking Study and Implementation Plan*.

d. On-street parking should be a minimum of 6 m away from any mid-block or intersection pedestrian crossing to support clear pedestrian crossing sightlines as outlined in Appendix B. Curb bulges should be used to separate pedestrian or bicycle crossings from parking spaces, yellow paint markings can be used for temporary or interim measures at District discretion.

e. Line painting should not be used to delineate parking spaces.

f. Support the use of on-street parking spaces for car sharing at District discretion.

g. Support the use of public electric vehicle parking spaces at District discretion.

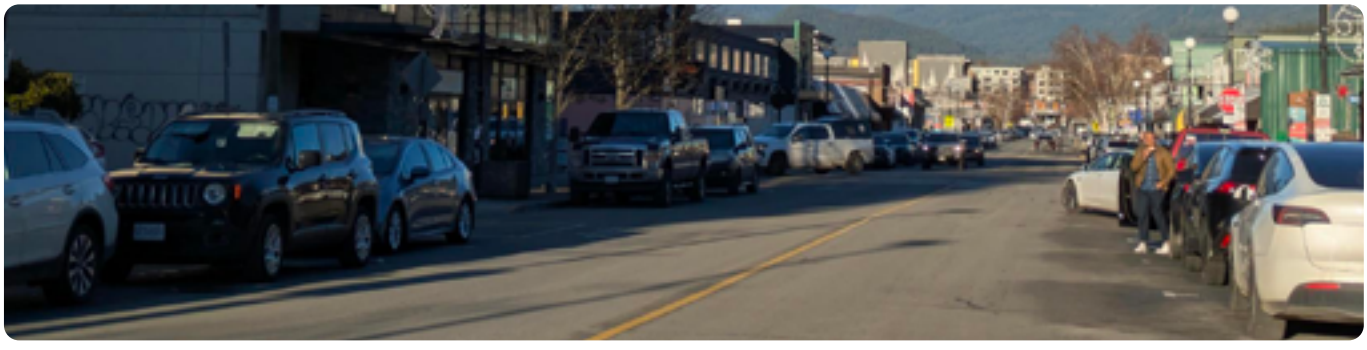


Photo: Alex Preston

2.8.2 OFF-STREET DISTRICT PARKING

Downtown Squamish offers off-street public parking lots within the Downtown Commercial Core land use area and adjacent to District parks and municipal infrastructure (e.g. Squamish Library). Waterfront Landing includes some future public parking areas for both the south and north parklands. Off-street parking lots should consider the following design guidelines:

2.8.2 OFF-STREET PARKING APPLICATION

a. Perpendicular parking is encouraged for off-street parking spaces and angled parking can be supported in one-way drive aisle designs. Parking dimensions should conform to Zoning Bylaw parking regulations.

b. Parking signage or pay parking infrastructure should be consistent with adjacent on street implementation unless otherwise directed by District staff.

c. Off-street parking near trail heads or park locations should consider paving gravel lots as Downtown trails and park use increases. Lighting is not recommended.

d. Redevelopment of paved parking areas within the Commercial Core land use area should consider increased tree canopy coverage and pedestrian scale lighting in the design. Large overhead lights should not be supported.

e. Support temporary use of parking lots in commercial core areas for community events and activation.

f. Off-street parking areas should include accessible parking spaces in accordance with the *Parking Map*.

Photo: Kerry Hamilton

PARKING

2.8.3 ACCESSIBLE PARKING

Downtown provides angled and parallel accessible spaces located along Cleveland Avenue, Second Avenue and some spaces within off-street parking areas. Accessible parking space amounts should increase with redevelopment both off-street and on-street. Off-street private accessible parking is regulated by the District of Squamish Zoning Bylaw. On-street or off-street District-owned accessible parking should follow the *Parking Map* for locations and the following application guidelines:

2.8.3 ACCESSIBLE PARKING APPLICATION

a. Accessible spaces should be provided in conformance with the *Parking Map*.

b. Accessible on-street or off-street space design should conform to the *District of Squamish Streetscape Universal Accessibility Guidelines* and include associated infrastructure such as signage, paint markings and ramps.

c. Commercial Core land use areas should support four accessible spaces per north-south block or one for every 10 parking spaces. Residential areas should support one space per north-south block. Some accessible spaces can be located along east-west blocks where needed.

d. Accessible spaces should be increased in established areas that support senior housing or medical facilities.

e. All on-street accessible spaces should include ramp access to a sidewalk in their design.

f. Accessible parking spaces should be located after a curb bulge at intersections and mid-block to provide an efficient ramp location for rear accessible space loading.

g. A minimum of one accessible space should be located at each off-street District owned public parking lot.

Photo: Pascale Gadbois

2.9 VEHICLE MOVEMENT

Road classifications organize roads according to their function and capacities based on land use and traffic movement.

Downtown Streetscapes should be designed in accordance with road classifications.

2.9.1 VEHICLE MOVEMENT

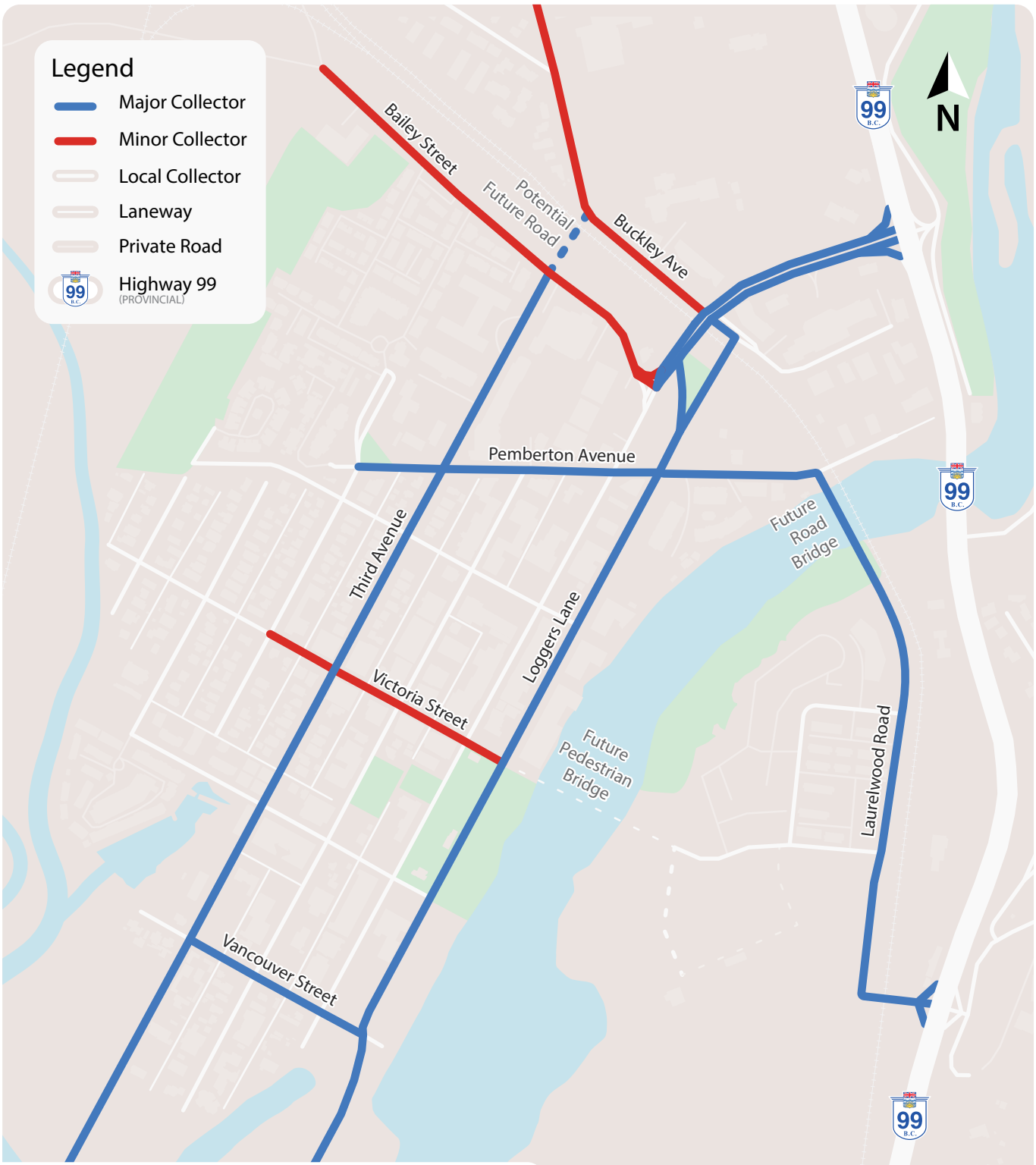
Road classifications are regulated by the District's S&DC Bylaw (last updated in 2015). Current and future major transportation routes are also outlined in Schedule F-1 of the Official Community Plan. The 2024 Transportation Master Plan recommends a review of the current S&DC Bylaw road classifications and a completion of the Downtown Entrance Study. The *Downtown Public Realm and Streetscape Design Guidelines* provides updated road classification considerations integrating past, current, and future land use and traffic management direction and may or may not be superseded by future studies.

2.9.1 ROAD CLASSIFICATION APPLICATION

a. Refer to the *Road Classification Map* for direction on Downtown road classifications. When in conflict with other bylaws, the *Road Classification Map* should supersede at District discretion.

VEHICLE MOVEMENT

ROAD CLASSIFICATION MAP



This map recreates a downtown specific road classification map for the purpose of the guidelines in this document.

2.10 SNOW CLEARING

Squamish typically experiences a season where snow falls, freezes, melts and/or accumulates making snow clearing, storage, and drainage key considerations when designing Downtown streetscapes and pathways.

Streetscapes and pathways should consider designs that work for all seasons.

OCP GUIDING POLICY

Major Transportation Network	20.1 a
Downtown Transportation	20.7 a

POLICY & REGULATION

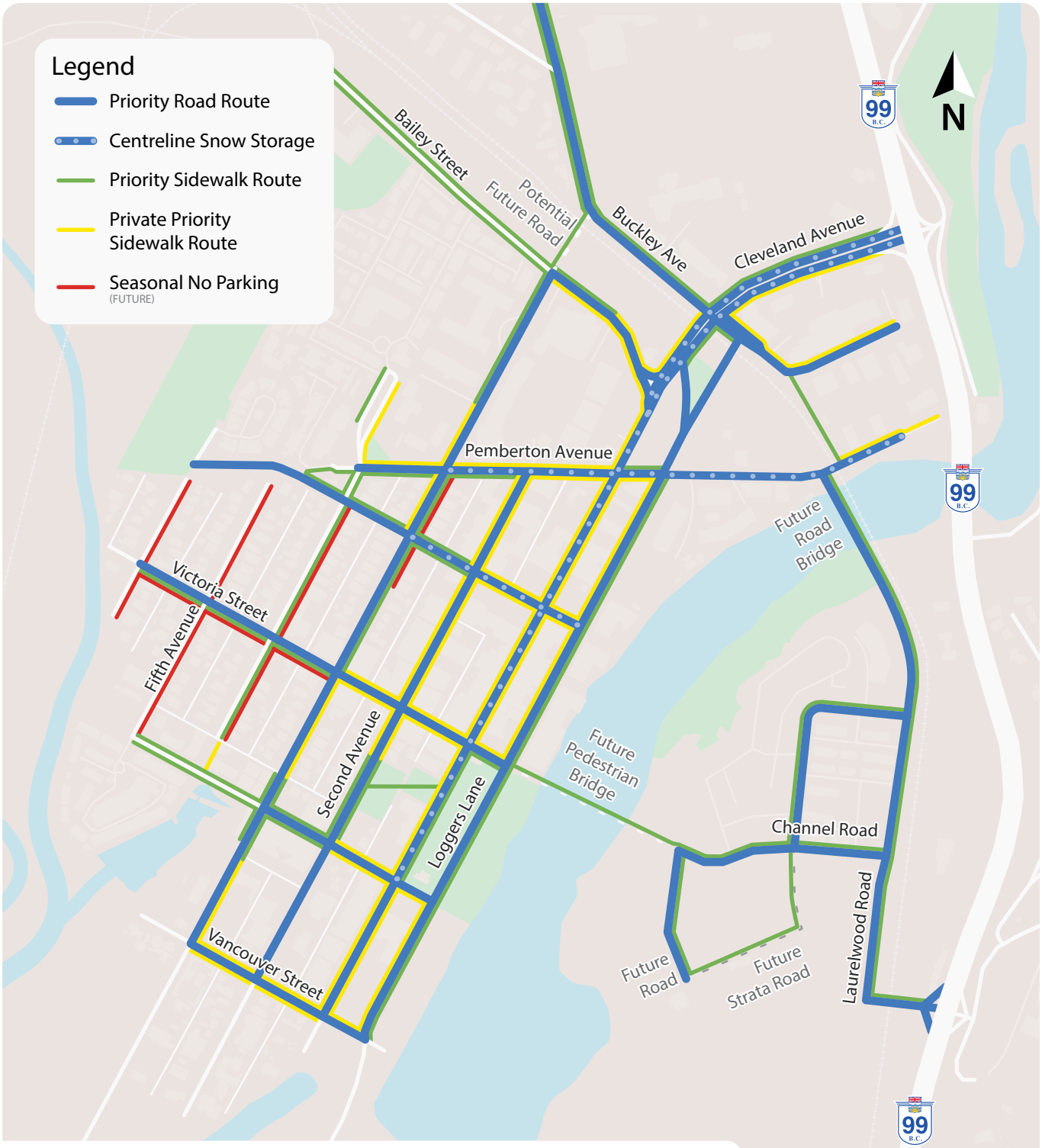
Downtown has the following additional snow clearing internal polices and regulation that apply during the winter season and have been integrated into the snow clearing policies in this document:

- Priority road snow clearing routes – Internal Policy
- Priority sidewalk/pathway clearing routes – Internal Policy
- Frontage and Sidewalk Maintenance Bylaw - Bylaw No. 2669, 2019
    - Requires property owners to clear sidewalks of snow and ice in their frontage.
- Restricted seasonal parking areas for snow clearing and storage – Internal Policy
- Dedicated streets for centreline, boulevard or ditch/bioswale snow storage – Internal Policy

Photo: Kerry Hamilton

SNOW CLEARING

SNOW CLEARING MAP



This map summarizes internal policy maps to highlight key snow clearing priority routes and seasonal no parking restrictions for the purpose of the guidelines in this document. Sidewalk routes are subject to change as Downtown develops.

SNOW CLEARING

2.10.1 ROAD SNOW CLEARING

The District is responsible for clearing all public roadways of snow and ice. District snow clearing focuses first on priority routes identified by hill, transit routes and collector roads for emergency vehicles before working on secondary and tertiary routes. Most roads in Downtown are priority routes (see *Snow Clearing Map*). Road snowplows work best when the plow edge can follow a curbline and blades have continuous contact to a consistent hard and durable surface. Areas for snow storage should be considered in streetscape design.

2.10.1 ROAD SNOW CLEARING APPLICATION

a. Curbs are to be considered for all Downtown Streetscape designs with exceptions at District direction for plaza and woonerf designs.

b. Curb bump outs at intersections and mid-blocks should ensure appropriate curvatures to allow for a continuous plow to curb connection.

c. Road grade changes that accommodate elevated sidewalks or crosswalks should have design grades that support continuous contact with the snowplow blades.

d. Gravel or paver road surfaces are not supported.

e. Streetscape designs should include a centreline, boulevard, buffer or ditch/bioswale snow storage option with guidance on centreline storage on the *Snow Clearing Map.*

Figure 2.10.1) Image of a M2 tandem axle dump truck typically used for road snow clearing.

2.10.2 SIDEWALK/PATHWAY SNOW CLEARING

Downtown public sidewalk and pathway snow clearing is primarily the responsibility of landowners, with the District to plow priority sidewalk areas for commercial core accessibility and safe routes to school routes.

In the Downtown Commercial Core Area, Gateway or Downtown South land use area, businesses or commercial strata lots that front sidewalks are expected to shovel or plow snow for the full length of sidewalk along their property, including vacant private property.

The District will be responsible to remove and plow snow within the Downtown Residential Land use area, along sidewalks fronting District parkland or institutional properties, and along safe routes to school routes which include both sidewalks and pathways.

The *Snow Clearing Map* shows current District priority sidewalk snow clearing routes while forecasting future routes once sidewalks are developed in the future. Adding sidewalks in these areas will increase the District's snow plowing responsibilities and budget needs.

As the Downtown develops, existing routes along current residential homes will become mixed use developments. Once these developments are established, the business and/or strata lots would be responsible for snow removal, reducing the District snow clearing responsibilities. The *Snow Clearing Map* is intended as a guideline for snow removal considerations and is subject to change.

2.10.2 SIDEWALK /PATHWAY SNOW CLEARING APPLICATION

a. District to inform property owners at redevelopment of Frontage and Sidewalk Maintenance Bylaw (Bylaw No. 2669, 2019) requirements and Private Priority Sidewalk Routes identified in the *Snow Clearing Map*.

b. District to secure snow clearing agreements through redevelopment for public pathways on private properties where applicable.

c. Sidewalks, pathways and boulevard areas that provide access to transit stops and accessible parking should be a priority to clear.

d. Salt products that erode concrete should not be used on District sidewalks.

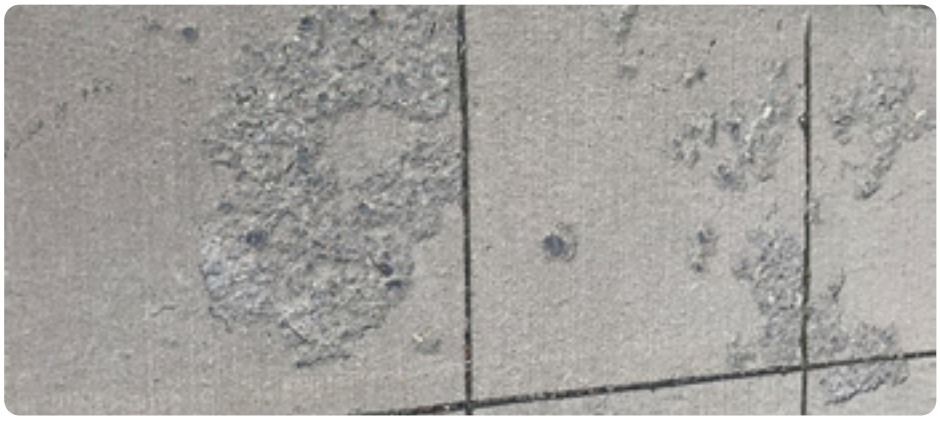


Fig 2.10.2) Shows salt damage to new concrete after the use of salt products over one winter season.

SNOW CLEARING

2.10.3 PARKING SNOW CLEARING

Seasonal No Parking signs are used on some Downtown streets to ensure there is space for snow clearing and snow storage while still supporting two-way traffic on streets. Seasonal No Parking signs are typically applied to streets without curbing and/or with narrow drive aisles. Seasonal No Parking signage applies from December 1 to March 1.

2.10.3 PARKING SNOW CLEARING APPLICATION

a. Seasonal *No Parking* signage should be installed along the bioswale side of Downtown Residential Streets. Current signage locations may need to change sides through redevelopment in compliance with the *Snow Clearing Map*.

b. Existing permanent seasonal No Parking signage should be maintained through construction and redevelopment.

c. New developments fronting seasonal No Parking streets are to install season no parking signage as part of the Servicing Agreement works.

d. Accessible parking stalls, buffer zones, ramps and boulevard areas adjacent to accessible parking should be completely cleared of snow.

Figure 2.10.3) Image of a typical 4x4 truck with a mounted 9 ft (2.75 m) articulating nose plow, typically used for laneway or narrow road snow clearing.

2.10.4 LANEWAY SNOW CLEARING

Downtown laneways will be primary vehicle access routes to developments, however are not considered priority routes for snow clearing and will only be cleared after priority routes are completed. Several laneways in Downtown are gravel roads. Only paved laneways can be plowed by the District. The narrow width of laneways do not allow for regular snowplow trucks to access them and require a large pickup truck for snow removal.

The District will need to consider increasing the amount of snow removal trucks in the District fleet as laneways in Downtown develop.

2.10.4 LANEWAY SNOW CLEARING APPLICATION

a. All new developments should pave and add storm drainage to the full width and frontage length of their laneway from street access to allow for snow clearing.

b. When 2.10.4.a requires paving beyond property frontage works should be secured through a Rezoning Land Development Agreement, Development Variance Permit Covenant, and/or Servicing Agreement. Additional laneway paving beyond property frontage is subject to latecomer agreements.

c. Redevelopment of laneways with dead ends should provide snow storage areas.

d. District to increase the amount of snow removal trucks in the District fleet as laneways Downtown develop.

2.10.5 BICYCLE LANE SNOW CLEARING

Given the snow clearing priorities needs across the District and limited staffing capacity during snow events, the District is not prioritizing protected bicycle lane clearing during snow events at this time. The District's priority road snow removal routes will offer on-street bike access and includes all transit routes making alternative transportation options accessible in snow events. Some multi-use pathways are included the District's sidewalk and pathway snow clearing routes and protected bicycle lanes will get plowed based on a capacity and needs basis.

2.10.5 BICYCLE LANE SNOW CLEARING APPLICATION

a. Consider snow storage and drainage in all bicycle infrastructure designs.

b. District to create internal policy for a priority protected bicycle lane snow clearing route.

2.11 WASTE COLLECTION

Recycling, organics, and garbage collection are an integral part of the development and planning process for commercial, institutional and multi-unit residential buildings, making collection an essential service to consider in Downtown streetscape design. Public waste bins are an important public realm service to help reduce litter.

Public and private waste collection is an essential service that should be considered in streetscape design.

OCP GUIDING POLICY

Solid Waste	21.9 a & 21.10 f
DPA 3: Universal Guidelines	36.7 d

POLICY & REGULATION

Solid Waste Storage Technical Design Guidelines

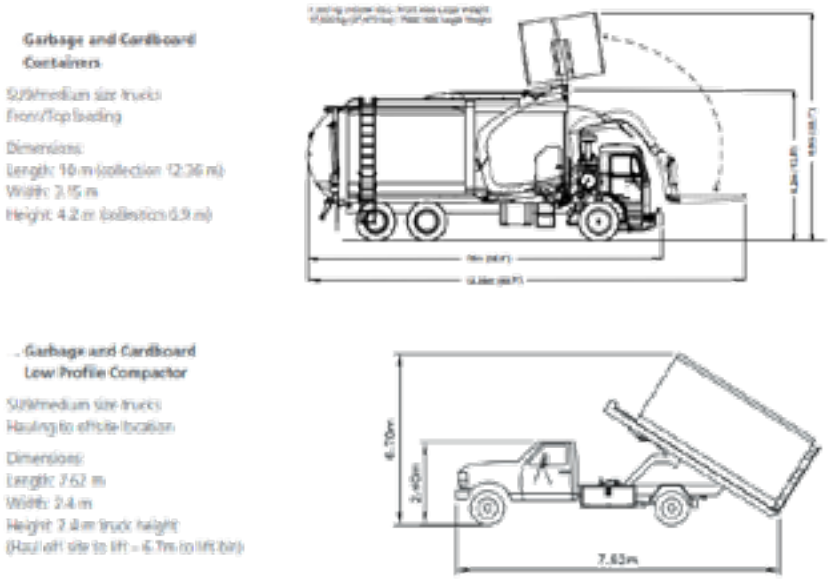


Figure 2.11.0) Waste Collection Truck Dimensions from District of Squamish Solid Waste Storage Technical Design Guidelines.

WASTE COLLECTION

WASTE COLLECTION MAP

This map provides collection route and access guidance and identifies where current and future public waste bins should be added or removed through development.

WASTE COLLECTION

2.11.1 PRIMARY LANEWAY COLLECTION

Downtown laneways will become the primary access for waste collection while also being the primary vehicle access to development. Laneway collection occurs several times a week and can take up to 15 minutes per visit. Collection can temporarily impede two-way traffic flow in laneways during collection periods but should not impede one-way traffic flow. To avoid impeding one-way traffic flow, waste collection design should be considered as part of both the laneway and private development design.

2.11.1 PRIMARY LANEWAY COLLECTION APPLICATION

a. Waste collection is supported within laneways Downtown but should not obstruct one-way traffic flow.

b. The maximum width collection should occupy in a laneway is 3.15 m for container collection, allowing one-way traffic flow along the remaining 2.75 m of the laneway.

c. A minimum 1.5 m wide x 2 m long flat surface with a clear height of 5.8 m along a laneway edge should be provided on private property to accommodate side loading tote collection so that one-way traffic does not impede traffic flow in laneways during tote collection periods.

d. Despite the minimum size in 2.11.1.c, the length of space for totes should increase based on the highest tote amount per collection category (e.g. a development that requires 2 organic totes and 3 recycling totes should provide space for 3 recycling totes). The length of the clear flat surface area should be calculated with a minimum 1 m length of space per tote.

Photo: Alex Preston

2.11.2 REVERSE LANEWAY COLLECTION

Not all laneways in Downtown connect through to streets resulting in dead-end laneways. Dead-end waste collection is supported but should encourage reversing into laneways to prioritize safe exiting sightlines.

2.11.2 REVERSE LANEWAY COLLECTION APPLICATION

a. Waste removal trucks should reverse into dead-end laneways to create safer sightline when exiting the laneway after collection.

b. Hammer heads or turn arounds do not need to be considered for dead-end laneways for waste removal needs.

c. Reverse Laneway Collection should follow *2.11.1 Primary Laneway Collection* design guidelines, except c & d for all developments to the left of a reverse laneway truck should include an additional 1.5 m partial pull off area for a length of 12 m in compliance with 2.11.1 b.

d. Reverse Laneway Collection should be at off-peak traffic hours and during day light hours to further reduce vehicle, bike and pedestrian conflicts with waste collection.

Figure 2.11.1) (left) tote side collection Figure 2.11.2) (right) bin front collection. Examples show a partial pull off laneway design in Downtown Squamish where one-way traffic flow is still accommodated.

WASTE COLLECTION

2.11.3 FRONTAGE COLLECTION

Not all properties Downtown have laneway access. Properties without laneway access should be designed for waste collection to take place on private property (off-street), so as not to disrupt pedestrian or vehicle traffic flow on District roadways. Frontage collection design that can support both a reverse collection approach or a pull-off approach to be determined as part of Development Permit review. Reverse collection may impede traffic flow temporarily but can increase pedestrian and sightline visibility when exiting. Pull-off collection would reduce traffic flow disruption but may have a larger impact on sidewalk safety and boulevard space. Strata roads are also considered frontage collection but should apply *Primary Laneway Collection* guidelines.

2.11.3 FRONTAGE COLLECTION APPLICATION

a. Development fronting Frontage Collection streets on the *Waste Collection Map* should design for complete off-street frontage collection.

b. Off-street frontage collection should design for reverse collection or pull off collection to be determined by both planning and engineering review at Development Permit.

c. Reverse collection or pull off collection designs should ensure sufficient space for both waste collection trucks with side and front-loading bins as per the *Solid Waste Storage Technical Design Guidelines*.

d. Waste removal along Collector roads will need to be carefully considered at redevelopment to determine an appropriate collection design that reduces impact to vehicle traffic flow.

e. Shared collection locations are encouraged along collector roads to reduce impacts to development and vehicle traffic flow.

f. Strata roads are Frontage Collection on private property but should follow *2.11.1 Primary Laneway Collection* design guidelines allowing for one-way traffic flow.

Photo: Alex Preston

WASTE COLLECTION

2.11.4 PUBLIC WASTE BINS

Public waste bins are an important public service within a streetscape to help reduce litter. Public waste bins require District staff time to service and maintain and should be thoughtfully located within a streetscape to accommodate servicing and capacity needs. Public beverage container recycling bins are supported in Downtown Squamish and must be certified bear resistant to avoid any conflicts and attractants with wildlife.

The *Waste Collection Map* is intended as a general guideline for the thoughtful addition of new waste bins through redevelopment and does not preclude the District from making changes to these locations as needed. With increased density downtown, increased operational budgets will be needed to accommodate increased waste collection needs.

Photo: Melanie Lazelle

2.11.4 PUBLIC WASTE BINS APPLICATION

a. Public waste bins should be concentrated in the Downtown Commercial land use area with a goal of three waste bins per block with increased public waste bins at destination parks and plaza areas.

b. Public waste bins should be considered within the Gateway, Mamquam Blind Channel and Downtown South land use area with a goal of one to two waste bins per block with a focus on locations near public mid-blocks, transit stops, intersections and trail heads.

c. Downtown Residential land use areas should only consider public waste bins at trail head locations.

d. Public waste bin locations should focus on transit stops, mid-blocks, intersections, plaza areas, parks and trail heads and follow guidance for future public waste bin locations outlined on the *Waste Collection Map*.

e. Bins along Cleveland and Second Avenue in the Downtown Commercial Core area, in public destination parks, in plaza spaces and along Mamquam Blind Channel pathways should consider two stream waste diversion with one bottle recycling bin and one waste bin in compliance with the *Streetscape Product List (Section 4)*.

f. Current public waste bins along Cleveland Avenue exceed guidelines and should be reduced to three per block through redevelopment. Refer to the *Waste Collection Map* for guidance on which bins should be retained.

g. Redevelopment of Downtown Streetscapes should upgrade older public waste bins to new standards and revisit waste bin locations for compliance with the following guidelines.

h. All public waste bins should comply with the product standard in the *Streetscape Elements Catalogue (Section 4.1)* including waste bin graphics.

i. All new public waste bins should be secured and bonded for through the Servicing Agreement.

2.12 TREES & PLANTINGS

As land in Downtown Squamish densifies and urbanizes, urban street trees and plantings become an important municipal asset to help preserve and integrate the surrounding natural environment and its benefits into the public realm.

The urban forests along streetscapes are living municipal infrastructure assets that play a critical role in achieving a healthy and sustainable public realm.

OCP GUIDING POLICY

Eco-Assets	10.7 a
Wildlife Corridors + Managing Attractants	10.13 b
Trees Soils + Invasive Species Management	10.19 a & 10.20 d
Downtown Squamish	16.1 a & b
Downtown Public Realm	16.5 a

POLICY & REGULATION

Tree Management Bylaw 2640, 2018

Urban Forest in Downtown Squamish Study (2025)

Subdivision & Development Control Bylaw - Schedule F

2.12.1 STREET TREES & PLANTINGS

Street trees and plantings originated as street beautification features aimed at naturalizing the city urban landscape. Symmetrical repetition of identical tree species became a common urban design principle to identify and beautify streetscapes. Similarly, planting beds historically have focused on non-native perennial flowers, providing colourful beauty in warm seasons but leaving limited plant life in cooler seasons.

Street trees and plantings are now recognized as municipal assets that offer more than just beautification, such as their beneficial underground tree root structures. Street trees and plantings should be designed as valuable urban forests to achieve a healthy and sustainable Downtown public realm.

2.12.1 STREET TREES & PLANTINGS APPLICATION

a. Downtown Streetscapes should aim to integrate the indigenous forests and natural surroundings of Squamish into streetscapes through:
- **i.** Use of native species.
- **ii.** Large planting areas.
- **iii.** Tree clumping.
- **iv.** Incorporating lower maintenance native grasses and four-season shrubs that reduce maintenance needs.
- **v.** Large tree canopies.
- **vi.** Incorporating coniferous trees into the streetscape.
- **vii.** Ensuring sufficient soil volumes.
- **viii.** Use of native rock in planting beds.

b. Downtown street trees and planting areas should move away from only seasonal deciduous beautification street trees and flowering planter beds and incorporate more functional, native and evergreen planting areas that mimic the vegetation diversity found in Squamish's indigenous forests and natural surroundings.

c. Rhythmic tree planting is recommended for most streetscapes, with clumping of mixed coniferous and deciduous street trees where possible to replicate a "forest feel".

d. Native, low-maintenance, bear-safe, pollinator friendly, wildfire smart and drought tolerant plant species are recommended.

e. Sufficient soil volumes should be prioritized in streetscape design to support tree growth.

f. All utilities should avoid installation underneath boulevard street tree and planting areas, including shallow utilities. All utilities should be shown on Landscape plans to mitigate conflicts.

g. Bioswales are recommended on some streetscapes to collect, retain and filter stormwater runoff. Hardy, native plant species capable of withstanding wet conditions, as well as dry summers are recommended in these applications. Bioswales can support medium to large canopy trees.

h. Irrigation should be required for all planting beds and street trees.
- **i.** Drip irrigation should be used for planting areas.
- **ii.** Deep root irrigation should be used for street trees.
- **iii.** All irrigation should be connected to private development if constructed as part of frontage improvements.

i. Street trees and planting species and sizes should be selected from the *2.12.2 Street Trees and Planting Detailed Table*. Substitutions can be supported at District discretion.

j. Streetscape Standards where grass treatments are recommended should use Eco Seed as it requires less water and reduced mowing maintenance.

k. Street trees and plantings should comply with wildfire hazard planting best practices:
- **i.** Stems of fire prone shrubs are spaced 2 m apart.
- **ii.** Grasses that grow over 20cm and fire prone shrubs are not located below fire-prone trees.
- **iii.** Fire prone trees are spaced to ensure that trunks are a minimum of 6 m apart.
- **iv.** Individual fire-prone trees may be clumped with fire-resistant deciduous trees but not with other fire prone trees.

TREES & PLANTINGS

2.12.2 STREET TREES & PLANTINGS DETAILED TABLE

TREES

Botanical Name	Common Name	Ever-green	NA Native	Drought Tolerant	Exposure		
					Sun	Partial	Shade
Acer circinatum	Vine Maple	N	Y	N	Y	Y	Y
Acer × freemanii 'Jeffersred'	Autumn Blaze Maple	N	N	N	Y	Y	
Acer palmatum variety	Japanese Maple	N	N	N	Y	Y	
Acer rubrum 'Frank Jr'	Redpointe Red Maple	N	N	Y	Y	Y	
Acer rubrum 'Red Sunset'	Red Sunset Red Maple	N	N	N	Y	Y	
Acer rubrum 'Red Rocket'	Red Rocket Red Maple	N	N	N	Y	Y	
Acer rubrum 'Scarlet Sentinel'	Scarlet Sentinel Maple	N	N	N	Y	Y	
Amelanchier alnifolia 'Autumn Brilliance'	Autumn Brilliance Serviceberry	N	N	N	Y	Y	Y
Betula nigra	River Birch	N	Y	Y	Y	Y	
Cercidiphyllum japonicum	Katsura	N	N		Y	Y	
Cercis sp.	Redbud varieties	N		Y	Y	Y	
Cornus kousa	Kousa Dogwood	N	N	Y	Y	Y	
Cornus kousa 'Starlight'	Starlight Dogwood	N	N	Y	Y	Y	
Cornus nuttallii	Pacific Dogwood	N	N	Y		Y	Y
Cupressus nootkatensis	Nootka Cypress	Y	Y	Y	Y	Y	
Fagus sylvatica 'Dawyck Gold'	Dawyck Gold Beech	N	N	N	Y	Y	
Fraxinus americana 'Autumn Applause'	Autumn Purple White Ash	N	N	N	Y	Y	
Fraxinus americana 'Autumn Purple'	Autumn Applesauce White Ash	N	N	N	Y	Y	
Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	N	N		Y	Y	
Nyssa sylvatica	Black Gum	N	N	Y	Y	Y	
Parrotia persica 'Ruby Vase'	Ruby Vase Persian Ironwood	N	N	Y	Y	Y	
Picea omorika	Serbian Spruce	Y	N	Y	Y	Y	
Pinus contorta	Shore Pine	Y	Y	Y	Y		
Platanus × acerifolia 'Bloodgood'	Bloodgood London Plane	N	N	Y	Y	Y	
Prunus sargentii 'Rancho'	Rancho Flowering Cherry	N	N	N	Y		
Prunus serrulata 'Shirofugen'	Shirofugen Flowering Cherry	N	N	N	Y		
Prunus × yedoensis 'Akebono'	Yoshino Cherry	N	N	N	Y		
Pseudotsuga menzeisii	Douglas Fir	Y	Y	N	Y	Y	
Thuja plicata	Western Red Cedar	Y	Y	N	Y	Y	
Tilia tomentosa	Silver Linden	N	N	Y	Y	Y	
Tsuga heterophylla	Western Hemlock	Y	Y	N	Y	Y	Y
Tsuga mertensiana	Mountain Hemlock	Y	Y	Y	Y	Y	
Ulmus americana 'Brandon'	Brandon Elm	N	N	Y	Y	Y	
Zelkova serrata 'Green Vase'	Green Vase Japanese Zelkova	N	N	N	Y		

TREES & PLANTINGS

Recommended Size At Planting	Mature Size			Location				Design Notes
	Height	Spread	Size	Blvd	Bulge	Plaza	Main	
2.4 m ht. (8'-0" ht.)	3–4.5 m	6–12 m	S	Y	Y		Y	Small multi-stem tree
8 cm cal. (3" cal.)	12–18 m	6–12 m	L	Y	Y		Y	Small-med multi-stem tree, 6' STD.
2.4 m ht. (8'-0" ht.)	4–6 m	5–7 m	S	Y	Y			Large size, green foliage
7 cm cal. (2 1/2" cal.)	13.5 m	9 m	L	Y	Y		Y	Large size, 6' STD.
8 cm cal. (3" cal.)	13–15 m	9–12 m	L	Y	Y			6' STD.
8 cm cal. (3" cal.)	9–12 m	3–6 m	M	Y	Y			6' STD.
8 cm cal. (3" cal.)	14–15 m	7–8 m	M	Y	Y			Crown broadens with time, 6' STD.
4 cm cal. (1 1/2" cal.)	4.5–7.5 m	4.5–6 m	S		Y		Y	Growd as multi or single stem. Canopy to be contained in planting area
3 m ht. (10'-0" ht.)	12–21 m	12–18 m	L		Y		Y	Large size, multistem
8 cm cal. (3" cal.)	12–18 m	7.5–18 m	L	Y		Y		Needs a lot of soil volume. 6' STD.
7 cm cal. (2 1/2" cal.)	6–9 m	8–10 m	M		Y	Y	Y	Small tree, can be single or multi-stem
7 cm cal. (2 1/2" cal.)	4–9 m	4–9 m		Y				more disease resistant than native
7 cm cal. (2 1/2" cal.)	9 m	7 m	M	Y		Y		more disease resistant than native
7 cm cal. (2 1/2" cal.)	4.5–20 m	3–8 m	S		Y	Y		6' STD.
3 m ht. (10'-0" ht.)	6–10.5 m	8–15 m	M	Y	Y			Prefers well-drained, moist soil.
7 cm cal. (2 1/2" cal.)	18–20 m	4–6 m	M	Y				6' STD.
8 cm cal. (3" cal.)	12–15 m	7.5–9 m	M	Y	Y	Y		6' STD.
8 cm cal. (3" cal.)	13.5–18 m	10.5–15 m	L	Y	Y	Y		6' STD.
7 cm cal. (2 1/2" cal.)	12–15 m	6–9 m	M	Y		Y		Only male species. Female species have messy fruit. 6' STD.
7 cm cal. (2 1/2" cal.)	9–15 m	6–9 m	M	Y	Y		Y	Large size. 6' STD.
7 cm cal. (2 1/2" cal.)	7.5–9 m	4.5–6 m	M	Y	Y			Perfect size for under wires, 6' STD.
3 m ht. (10'-0" ht.)	15–18 m	6–7.5 m	M		Y			In 2-3 clumps varied in height
3 m ht. (10'-0" ht.)	6–10.5 m	6–10.5 m	L				Y	Large size
8 cm cal. (3" cal.)	23–30.5 m	18–23 m	L	Y	Y		Y	Large size, 6' STD.
7 cm cal. (2 1/2" cal.)	6–8 m	3–4 m	S		Y	Y		More narrow canopy than other cherry trees, pink flowers, 6' STD.
7 cm cal. (2 1/2" cal.)	7.5–9 m	7.5–9 m	M		Y	Y		White flowers change to pink, 6' STD.
7 cm cal. (2 1/2" cal.)	7.5–10.5 m	7.5–12 m	M		Y	Y		Light pink flowers, 6' STD.
3 m ht. (10'-0" ht.)	70–90 m	15–20 m	L		Y			Large size, Only where space allows
3 m ht. (10'-0" ht.)	54–60 m	8–16.5 m	L		Y		Y	Large size, needs a large space
7 cm cal. (2 1/2" cal.)	15–21 m	9–15 m	L	Y		Y		6' STD, Can sub with Tilia euchlora
3 m ht. (10'-0" ht.)	50–70 m	9–13 m	L		Y		Y	Large size
3 m ht. (10'-0" ht.)	40 m	9–15 m	L		Y		Y	Shorter lifespan than other conifers
8 cm cal. (3" cal.)	12–15 m	8 m–10 m	M	Y	Y	Y	Y	Hardy, adaptable. Support 'Princeton'
8 cm cal. (3" cal.)	21–23.5 m	12–15 m	L	Y	Y			6' STD.

NOTE: STD = Standard/Clear Trunk Before Branching

TREES & PLANTINGS

2.12.2 STREET TREES & PLANTINGS DETAILED TABLE

SHRUBS

Botanical Name	Common Name	Ever-green	NA Native	Drought Tolerant	Exposure		
					Sun	Partial	Shade
Cornus alba 'Sibirica'	Tatarian Dogwood	N	N	Y	Y	Y	
Erica carnea 'Springwood White'	Drwarf White Heath	Y	N	Y	Y	Y	
Escallonia 'Newport Dwarf'	Newport Dwarf Escallonia	Y	N	Y	Y	Y	
Euonymus alatus 'Compactus'	Dwarf Burning Bush	N	N	Y	Y	Y	
Ilex crenata 'Green Thumb'	Japanese Holly	Y	N	N	Y	Y	
Lonicera pileata	Privet Honeysuckle	Y	N	Y	Y	Y	
Mahonia aquifolium 'Compacta'	Dwarf Oregon Grape	Y	N	Y	Y	Y	
Nandina domestica 'Fire Power'	Fire Power Heavenly Bamboo	Y	N	Y	Y	Y	
Physocarpus capitatus	Pacific Ninebark	N	Y	Y	Y	Y	
Pinus mugo 'Pumilio'	Dwarf Mugo Pine	Y	N	Y	Y	Y	
Polystichum munitum	Western Sword Fern	Y	Y	S		Y	Y
Ribes sanguineum	Red Flowering Current	N	Y	Y	Y	Y	Y
Sarcococca hookeriana var. Humilis	Dwarf Sweetbox	Y	N	Y			Y
Sarcococca ruscifolia	Sweetbox	Y	N	Y			Y
Symphoricarpos 'Proud Berry'	Proud Berry Snowberry	N	N	Y	Y	Y	
Vaccinium ovatum	Evergreen Huckleberry	Y	Y	Y	Y	Y	Y

PERENNIALS

Botanical Name	Common Name	Ever-green	NA Native	Drought Tolerant	Exposure		
					Sun	Partial	Shade
Achillea millefolium	Yarrow	N	Y	Y	Y	Y	Y
Anaphalis margaritacea	Western Pearly Everlasting	N	Y	Y	Y	Y	
Astilbe sp.	Astilbe	N	N	N		Y	Y
Caryopteris × clandonensis 'First Choice'	First Choice Bluebeard	N	N	Y	Y	Y	
Dicentra formosa	Western Bleeding Heart	N	Y	Y		Y	Y
Echinacea purpurea	Purple Coneflower	S	Y	Y	Y		
Lavandula angustifolia 'Hidcote'	Hidcote Lavander	S	N	Y	Y	Y	
Ligularia 'Bottle Rocket'	Bottle Rocket Leopard Plant	N	N	N		Y	Y
Lupinus nootkatensis	Nootka Lupine	N	Y	Y	Y	Y	
Monarda didyma	Bee Balm	N	N	Y	Y	Y	
Nepeta × faassenii 'Dropmore'	Dropmore Blue Catmint	S	N	Y	Y	Y	
Perovskia atriplicifolia	Russian Sage	N	N	Y	Y	Y	
Rudbeckia fulgida 'Goldsturm'	Black Eyed Susan	N	N	Y	Y	Y	
Rosmarinus officinalis	Rosemary	S	N	Y	Y	Y	
Sedum 'Autumn Joy'	Autumn Joy Stonecrop	N	N	Y	Y	Y	Y

TREES & PLANTINGS

Recommended Size At Planting	Mature Size		Location				Design Notes
	Height	Spread	Blvd	Bulge	Plaza	Main	
#2 Pot	1.2–2.1 m	0.9–1.5 m		Y	Y	Y	Carefully place to accommodate mature size
#1 Pot	0.2 m	0.4 m	Y	Y			White flowers in winter
#2 Pot	0.9 m	0.9 m		Y	Y		Good for hedges
#3 Pot	2.7–3 m	2.7–3 m		Y	Y		Carefully place to accommodate mature size
#2 Pot	0.9–1.2 m	1.2–1.5 m		Y	Y		Carefully place to accommodate mature size
#2 Pot	0.5–1 m	1.5–2.4 m	Y	Y			Allow enough space for plant to mature without needing to be trimmed
#3 Pot	0.6–0.9 m	1.5 m		Y	Y	Y	Berries attract birds
#2 Pot	0.3–0.6 m	0.3–0.6 m	Y	Y	Y		
#3 Pot	1.5–3 m	1.5–3 m		Y		Y	Carefully place to accommodate mature size
#3 Pot	0.9–1.5 m	1.8–3 m	Y	Y	Y		Carefully place to accommodate mature size
#2 Pot	1–1.8 m	1–1.8 m		Y		Y	Requires shade
#3 Pot	1–1.5 m	0.5–2 m				Y	Pink flowers in spring attract hummingbirds
#2 Pot	0.3–0.6 m	0.6–1.2 m		Y	Y		Requires shade
#2 Pot	1.5 m	1.5 m		Y	Y		Requires shade
#3 Pot	0.6 m	1.8–3 m		Y		Y	Fall/winter light pink berries
#3 Pot	0.6 m	0.9–3 m		Y	Y	Y	Carefully place to accommodate mature size

Recommended Size At Planting	Mature Size		Location				Design Notes
	Height	Spread	Blvd	Bulge	Plaza	Main	
#2 Pot	0.6–0.9 m	0.6–0.9 m	Y	Y		Y	White flower
#2 Pot	0.3–0.9 m	0.3–0.6 m		Y	Y		
#2 Pot	0.3–0.6 m	0.3–0.6 m	Y	Y	Y		Requires part shade
#2 Pot	0.6–0.9 m	0.6–0.9 m	Y	Y	Y		
#1 Pot	0.3–0.6 m	0.6–0.9 m		Y	Y	Y	Dies down after it blooms, requires shade
#2 Pot	0.9–1.2 m	0.6 m	Y			Y	Purple flower
#2 Pot	0.3–0.6 m	0.3–0.6 m	Y	Y			Ensure good drainage
#2 Pot	0.6–0.9 m	0.6–0.9 m		Y		Y	Can't handle afternoon sun
#2 Pot	0.4–0.6 m	0.2–0.3 m				Y	Violet flower
#2 Pot	0.3–1.2 m	0.3–0.9 m		Y		Y	
#2 Pot	0.3–0.6 m	0.6–0.9 m	Y	Y	Y		
#2 Pot	0.9–1.2 m	0.9–1.5 m		Y	Y	Y	Carefully place to accommodate mature size
#2 Pot	0.6 m	0.6 m	Y			Y	Plant in areas that won't dominate others
#2 Pot	0.6–1.8 m	0.6–1.5 m		Y	Y	Y	
#2 Pot	0.3–0.6 m	0.3–0.6 m	Y	Y	Y		

TREES & PLANTINGS

2.12.2 STREET TREES & PLANTINGS DETAILED TABLE

ORNAMENTAL GRASSES

Botanical Name	Common Name	Ever-green	NA Native	Drought Tolerant	Exposure		
					Sun	Partial	Shade
Calamagrostis 'Karl Foerster'	Karl Foerster Reedgrass	N	N	Y	Y	Y	
Helictotrichon sempervirens	Blue Oat Grass	Y	N	Y	Y		
Miscanthus sinensis 'Little Kitten'	Dwarf Maiden Grass	N	N	Y	Y		
Miscanthus sinensis 'Yaku Jima'	Dwarf Maiden Grass	N	N	Y	Y		
Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	N	N	Y	Y		

GROUNDCOVER

Botanical Name	Common Name	Ever-green	NA Native	Drought Tolerant	Exposure		
					Sun	Partial	Shade
Cotoneaster dammeri	Bearberry cotoneaster	Y	N	Y	Y	Y	
Euonymous fortunei 'Coloratus'	Purple Wintercreeper Euonymus	Y	N	Y	Y	Y	Y
Mahonia repens	Creeping Barberry	Y	N	Y		Y	Y

AQUATIC PLANTS

Botanical Name	Common Name	Ever-green	NA Native	Drought Tolerant	Exposure		
					Sun	Partial	Shade
Carex stipata	Sawbeak Sedge	S	Y	Y	Y	Y	
Juncus effusus	Common Rush	Y	Y	S	Y	Y	
Scirpus microcarpus	Hardstem Rush	N	Y	N	Y	Y	

TREES & PLANTINGS

Recommended Size At Planting	Mature Size		Location				Design Notes
	Height	Spread	Blvd	Bulge	Plaza	Main	
#2 Pot	0.9–1.8 m	0.3–0.6 m	Y	Y	Y		Golden fall color
#2 Pot	0.6–1.5 m	0.3–0.6 m	Y	Y	Y	Y	Use carefully, tends to die out
#2 Pot	0.6–0.9 m	0.3–0.6 m	Y	Y	Y		Golden fall color
#2 Pot	0.9–1.2 m	0.9–1.2 m	Y	Y	Y		Golden fall color
#2 Pot	0.3–0.9 m	0.3–0.9 m	Y	Y	Y		Golden fall color

Recommended Size At Planting	Mature Size		Location				Design Notes
	Height	Spread	Blvd	Bulge	Plaza	Main	
#2 Pot	0.2–0.3 m	1.2–1.8 m	Y	Y	Y		
#2 Pot	0.3–0.6 m	0.6–0.9 m	Y	Y	Y		Red leaves in fall
#2 Pot	0.3–0.6 m	0.3–0.9 m	Y	Y	Y	Y	Requires shade

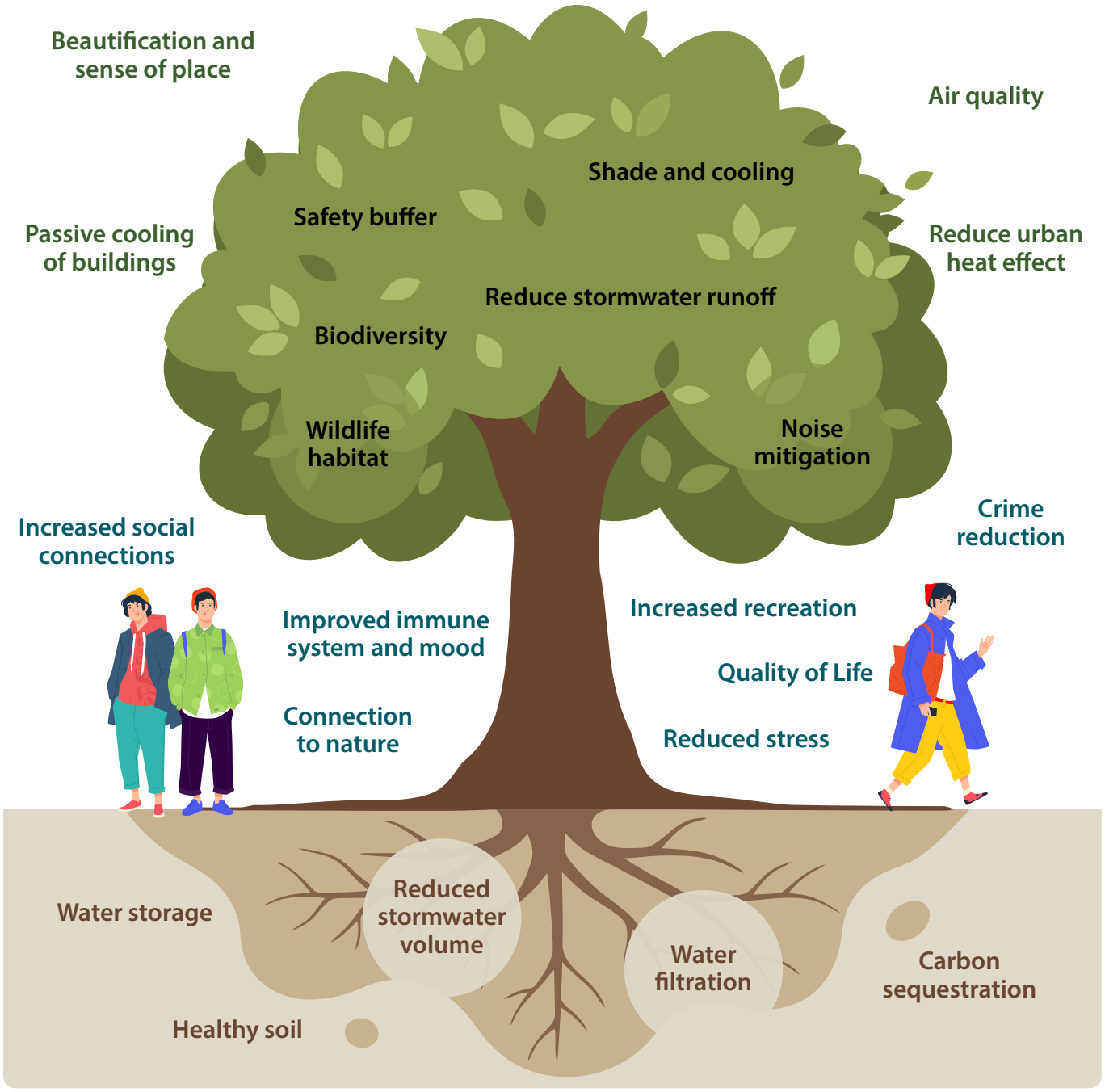
Recommended Size At Planting	Mature Size		Location				Design Notes
	Height	Spread	Blvd	Bulge	Plaza	Main	
#2 Pot	0.3–0.9 m	0.2–0.3 m				Y	
#2 Pot	0.3–1 m	0.3–1 m				Y	Use only when naturalization is desired
#2 Pot	0.6–1.5 m	0.3–0.6 m				Y	Use only when naturalization is desired

Photo: Kerry Hamilton

TREES & PLANTINGS

2.12.3 STREET TREES

Street trees are living municipal assets where both the tree canopy and root system can provide numerous benefits to a public realm and municipal services if designed appropriately. New street trees should be designed to ensure there is adequate space for tree canopy growth and sufficient soil volumes for root growth to support the following street tree benefits:



TREES & PLANTINGS

Downtown Squamish streetscapes did not have boulevard street trees until development in early 2000s. Cleveland Avenue did have some street trees in planters that unfortunately died of disease. The lack of street trees, offers Downtown Squamish a unique opportunity to create tree species direction for each street, and strengthens the value of retention of mature trees where they do exist.

The *2.12.4 Street Trees Table* has been carefully selected with several functional and aesthetic considerations including: native, bear smart, drought tolerance, sun exposure, adjacent uses, site context, existing tree species, tree canopy shape and size, and maintenance. Each street supports different deciduous tree species to give each street its own character, while coniferous and deciduous supporting trees offer opportunities for tree clumping and species diversity creating a natural and resilient urban forest within the Downtown streetscape.

2.12.3 STREET TREES APPLICATION

a. Street trees for each street should be planted in accordance with the *2.12.4 Street Tree Table* and relevant *Streetscape Standards (Section 3)*.

b. Street trees should be designed, selected and planted in accordance with the *2.12.2 Street Trees & Planting Detailed Table* size, shape and design notes.

c. Rhythmic tree planting is recommended for most streetscapes, with clusters of mixed coniferous and deciduous street trees where possible to create a "forest feel" evocative of Squamish's lush forest and mountainous terrain.

d. Flowering trees are supported on some streetscapes at mid-block bump-outs and intersections where there is ample room to support healthy root and canopy growth.

e. Street trees should avoid species with large leaves, large seeds, and sticky fruit or cones.

f. The tree planting palette should include a variety of species to support a strong, resilient tree community capable of weathering disease and uncertainties of climate change.

g. Street tree soil should be connected and continuous where possible supported by soil cells or structural soil beneath paving as required.

h. Root barriers should be installed along adjacent paved surfaces to prevent undesirable root spread and pavement damage.

i. Street trees should be installed with tree stakes in planters or with tree anchoring products for tree grates to support vertical growth, especially on north south streets where Downtown winds are prevalent.

j. Street tree placement should consider building walkway canopy locations when possible to reduce conflicts.

k. Street trees canopy branches should be maintained and assisted to grow over building walkway canopies and should deter from pruning.

TREES & PLANTINGS

2.12.4 STREET TREES TABLE

NORTH-SOUTH STREETS

MAMQUAM BLIND CHANNEL

Trees on dike structures along the Mamquam Blind Channel should create opportunities for large open spaces that preserve views at waterfront plaza locations while also providing areas for shade and integration of waterfront tree species. To preserve views and avoid dike slope conflicts, large trees should primarily be concentrated along the building edge away from the railing edge. Some small trees could be considered along the waterfront railing edge where space allows. A mixture of native large canopy coniferous and deciduous trees should be varied along the waterfront area. Large, mounded planting beds are encouraged to reach desired soil volumes. Soil cells should be used in large paved areas.

Building Edge	Dike Edge
Primary	*Coniferous*
River Birch	Nootka Cypress
Shore Pine	Serbian Spruce
Supporting	*Deciduous*
Douglas Fir	Vine Maple
Western Red Cedar	Dogwood
Western Hemlock	
Nootka Cypress	
Serbian Spruce	
Mountain Hemlock	

LOGGERS LANE

Loggers Lane is a Major Collector Road designed as a gateway road to Oceanfront and a major truck route. Future designs of Loggers Lane should consider the following rhythmic planting of primary tree species to support gateway aesthetics, while supporting the functional needs of the street. Supporting trees can be used in clumps with primary trees where appropriate. Street trees anticipate above ground electrical utilities are undergrounded with a wider boulevard width along the east side compared to the west.

Primary	Supporting
East Side	*Coniferous*
Green Vase Zelkova	Douglas Fir
West Side	Western Red Cedar
Scarlet Sentinel Maple	Western Hemlock
	Nootka Cypress
	Serbian Spruce
	Mountain Hemlock
	Deciduous
	Vine Maple

TREES & PLANTINGS

CLEVELAND AVENUE

Downtown Squamish's high street between Pemberton and Main Street should provide concentrated large planting beds with both primary trees and supporting trees spaced out across the block. Spacing between planters creates an opportunity to integrate native and mature conifers to the street, create concentrated deciduous tree shading areas for seating, and preserves space for viewscapes and commercial activity. The Red Sunset Maple will bring colour to the street in the Fall while the various conifer trees bring year long dark green vegetation to the street integrating with the surrounding coniferous forest. Main to Vancouver and Pemberton North can support more rhythmic tree planting between grates and planters, while a different species is recommended from Pemberton north due to tighter boulevard cross-sections and desire for narrower tree canopies to reduce conflicts with road users.

Primary

Pemberton – Main

Red Sunset Red Maple

Western Red Cedar

Douglas Fir

Main – Vancouver

Red Sunset Red Maple

North of Pemberton

Scarlet Sentinel Maple

Supporting

Coniferous

Nootka Cypress

Serbian Spruce

Mountain Hemlock

Deciduous

Himalayan Birch

Autumn Brilliance Serviceberry

Vine Maple

SECOND AVENUE

Second Avenue should support a rhythmic balance between primary street trees in planting beds and in grates. Mid-blocks and intersections should provide variation in planting rhythm and support integration of flowering trees, clumped with additional tree options.

Primary

All

Allée Lacebark Elm

Mid-block / Intersection

Flowering

Yoshino Cherry

Shirofugen Flower Cherry

Rancho Flowering Cherry

Additional Options

Dawyck Gold Beech

River Birch

TREES & PLANTINGS

2.12.4 STREET TREES TABLE

THIRD AVENUE

Third Avenue should support a rhythmic planting of primary street trees along grass boulevards to support shaded and unobstructed cycling movement. Clumping of main and supportive street trees are encouraged at mid-blocks and intersections to support variation in planting rhythm and species diversity with selective conifer placements where sightlines allow. Retention of existing mature trees near or within District Road right of way is encouraged over planting new trees and may require cross-section design changes where supported.

Primary	Supporting
All	*Coniferous*
Sour Gum	Nootka Cypress
Black Tupelo	Serbian Spruce
	Mountain Hemlock
	Deciduous
	Dogwood

FOURTH, FIFTH & SIXTH AVENUE

No Above Ground Electrical Utilities Side

A grass boulevard that supports a mix of varied coniferous and deciduous large street trees to provide shade protection. Rhythmic tree spacing is not desired and should depend on street trees selected. Retention of existing mature trees near or within District road right of way is encouraged over planting new trees and may require cross-section design changes where supported.

Above Ground Electrical Utilities Side

Small canopy street trees can be supported within the bioswale where possible and should meet BC Hydro tree canopy clearance standards.

No Above Ground Utilities Side	Above Ground Utilities Side
Coniferous	*Small Canopy*
Western Hemlock	Japanese Maple
Western Red Cedar	Vine Maple
Douglas Fir	Dogwood
Deciduous	Autumn Brilliance Serviceberry
Autumn Blaze Maple	
Bloodgood London Plane	
Silver Linden	

Photo: Kerry Hamilton

EAST–WEST STREETS

BAILEY STREET

South Side

Retention of existing grass boulevard and existing street trees. Additional grass boulevard and rhythmically planted primary street trees to be supported in any new boulevard space. Curb bump outs should include supporting trees where sightlines allow. Retention of existing mature trees near or within District road right of way is encouraged over planting new trees and may require cross-section design changes where supported.

North Side

Bioswale can support rhythmically planted primary street trees with options for supporting tree species where possible. All main and supporting trees are bioswale supported trees.

Primary	Supporting
All	*Coniferous*
Redpoint Red Maple	Western Hemlock
	Western Red Cedar
	Nootka Cypress
	Mountain Hemlock
	Deciduous
	Vine Maple
	Autumn Brilliance Serviceberry

PEMBERTON AVENUE

Pemberton Avenue should support a rhythmic planting of primary street trees in tree grates. Clumping of supporting street trees in planter beds may not be appropriate for the complexity of this street and should only be considered where appropriate.

Primary	Supporting
All	*Coniferous*
Red Rocket Red Maple	Douglas Fir
	Serbian Spruce
	Nootka Cypress
	Deciduous
	Vine Maple

WINNIPEG STREET

Winnipeg Street should support a rhythmic balance between planting beds and street trees in grates. Street trees in grates should be deciduous with large canopies to provide shade protection. Mid-blocks and intersections to provide variation in planting rhythm and support species diversity with the integration of flowering trees and conifers.

Primary	Supporting
Third – Loggers	*Third – Loggers*
Autumn Purple White Ash	Yoshino Cherry
Autumn Applesauce White Ash	Shirofugen Flowering Cherry
West of Third	Rancho Flowering Cherry
American Elm	*West of Third*
	Douglas Fir
	Western Red Cedar
	Western Hemlock

TREES & PLANTINGS

2.12.4 STREET TREES TABLE

VICTORIA STREET

Victoria Street should support a rhythmic planting of primary street trees along varied grates and large planters to support shaded and unobstructed cycling movement. Supporting trees can be used in large planters to provide clumping and species variety where sightlines permit. Soil to be continuous to support mature tree growth. Structural soil should be used where trees are in grates within hard surfaces.

Primary	Supporting
All	*Coniferous*
Ruby Vase	Serbian Spruce
	Nootka Cypress
	Mountain Hemlock
	Deciduous
	Dogwood

MAIN STREET

Main Street should have various existing street tree applications. Depending on the application, street trees should support a rhythmic balance between primary trees planted in planting beds and in grate. Supporting trees should be clumped with primary trees in planting beds where space permits. Primary trees in a woonerf or plaza design should be in large planters clustered with supporting trees or with supporting tree in additional planters. Soil cells should be used for paved plaza areas to add additional soil volume for large tree growth.

Primary	Supporting
Sixth – Second	*Coniferous*
Autumn Blaze Maple	Serbian Spruce
Second – Loggers	Nootka Cypress
Katsura	Shore Pine
Douglas Fir	*Deciduous*
Western Red Cedar	Vine Maple
	Japanese Maple
	Autumn Brilliance Service Berry
	Dogwood
	Autumn Blaze Maple

VANCOUVER STREET

South Side

Small canopy street trees can be supported along the north side of the ditch/bioswale with clearance considerations to the truck route and existing above ground hydro poles.

North Side

Large planting beds should support opportunities for a variety of large canopy street trees. Conifers should be prioritized and can be clumped with deciduous trees with conifers needing to be no less than 10 m apart to support wildfire supportive planting practices.

Primary	
South Side	*North Side*
Vine Maple	Western Red Cedar
Japanese Maple	Western Hemlock
	Shore Pine
	Princeton Sentry Ginkgo

2.12.5 SOIL

SOIL

Soil is a type of native growing medium comprised of mineral particles, organic matter and living organisms used to provide the essential structure and nutrients to support landscaping of grass, shrubs and trees. Soil nutrients, volume, depth, drainage and irrigation are important considerations that impact street tree and planting health and growth. Soil volume also provides storm water retention capacity assisting in storm water storage and reduced outfall during heavy rain events. Increased soil depth offers greater water retention capacity useful for increasing drought conditions. Desired soil volumes for optimal street tree health can be challenging to meet within a constrained urban context. Engineered soil and soil cells are methods to achieve desired soil volumes by extending soil underneath pavement. Soil volumes should be calculated using the *2.12.5 Soil Volume Table*.

2.12.5 SOIL VOLUME TABLE

	Tree Size*		
	Small	**Medium**	**Large**
Single Tree Minimum Soil Volume	10 m^3	20 m^3	30 m^3
Shared Minimum Soil Volume	5 m^3	15 m^3	20 m^3
Minimum Depths**	0.6 m	0.9 m	0.9 m

* *Fastigiate trees classified as a medium size tree should require large size tree soil volumes.*

** *Minimum depth in compliance with CLS, see Streetscape Standards for recommended depths.*

Soil volumes are determined by location and tree sizes depended on both height and canopy spread and should follow these general guidelines:

Small
A tree of a species that normally reaches a height at or above 3 m but less than 7 m and/or a maximum canopy spread of 6 m upon maturity.

Medium
A tree of a species that normally reaches a height at or above 7 m but less than 12 m and/or a maximum canopy spread to 10 m upon maturity.

Large
A tree of a species that normally reaches a height at or above 12 m and/or a maximum canopy spread greater than 10 m upon maturity.

The *Street Tree & Planting Detailed Table* includes mature tree size in the table for each supported street tree species.

TREES & PLANTINGS

2.12.5 SOIL

ENGINEERED SOIL

Engineered soil also known as structural soil is a type of growing medium that can be compacted to support pavement installation while permitting tree root growth.

Engineered soil should:

- Be a mixture of a specific angular or gap-upgraded clear blasted rock 75mm (3”), soil and stabilizing compound that supports air and water pores for root growth.
- Have specialized rock from a tested source to ensure angles can support the necessary gaps for soil.
- Not contain fine particles that could take away from soil gaps.
- Have stabilizing compound that helps adhere soil to the rock. (varies between manufacturers)
- Be rated by geotechnical and civil engineering for use under parking, sidewalks and boulevards (generally not rated for road use).
- Have soil volume calculated at 30% of structural soil limiting application within constrained spaces that could inhibit tree root growth.
- Have handling and installation characteristics to up hold to achieve engineered soil integrity, with installation during heavy rain and over mixing to be generally avoided.

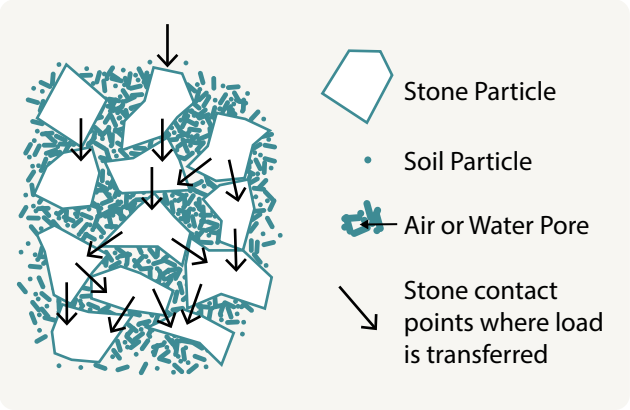


Figure 2.12.5 a) Engineered Soil

SOIL CELLS

Soil cells are underground structural units that provide support for paved surfaces and store compacted soil for root growth.

Benefits of soil cells:

- Typically rated for 100 years.
- Provide optimal soil volume capacity for root growth and stormwater management.
- Less prone to installation errors.
- Helpful in cases of utilities conflicts.
- Can be easily removed in emergencies.
- Damaged units are detachable limiting impact to adjacent units.

Challenges of soil cells:

- More expensive product.

Soil cells should be:

- Arranged in blocks that support radial root growth from centre of tree.
- Connected to open planting beds and tree grates providing additional soil volume underneath boulevards and sidewalks.
- Reviewed by geotechnical and engineering consultants for applications underneath roadways.
- Used in high commercial or plaza locations where trees are planted predominantly in paved areas.

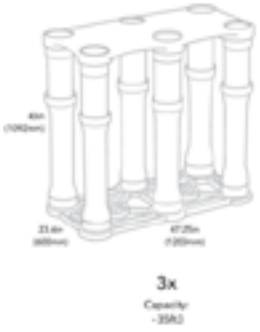


Figure 2.12.5 b) Soil cell with soil volume capacity (deeproot)

2.12.5 SOIL APPLICATION

a. Soil should follow the standards identified in the Canadian Landscape Standards (CLS).

b. Soil volume for each street tree should be calculated using the *2.12.5 Soil Volume Table*. Engineered soil or soil cells should be used to achieve soil volumes for trees in grates or when desired soil volumes are not achieved within planting beds.

- **i.** Application of engineered soil or soil cells should conform with *Streetscape Standards (Section 3)*.
- **ii.** Engineered soil should be primarily used in residential applications or underneath bicycle lanes and sidewalks for additional root growth space.
- **iii.** Soil cell products should primarily be used in dense or heavily paved commercial streets and plaza spaces, to connect soil volumes underneath boulevard spaces, when soil options are limited, or where there are utility conflicts.

c. Soil depths should comply with *Streetscape Standards (Section 3)* depths or if not detailed, meet the *2.12.5 Soil Volume Table* minimum standards.

d. Soil between street trees should continue street tree minimum soil volume depths and be connected and continuous where possible using soil cells or structural soil.

e. Engineered soil should be tested and provided by a certified structural soil manufacture, and should follow handling and installation manufacturing standards.

f. Engineered soil volume should be calculated with 30% soil volume.

g. Soil cell products should be from certified soil cell manufactures and installed per manufacturer standards.

h. Structural soil and soil cells should be irrigated to ensure water and oxygen absorption.

i. Geogrid should be used to contain soil within the exterior of soil cells but should not be used adjacent to planting beds but should not be used on edges that connect to the tree root ball and/or adjacent continuous soil volumes.

j. Soil cells should be registered as a utility.

k. A 1:1 slope needed for support of adjacent paved surfaces should be considered in detailed civil designs and soil volume calculations.

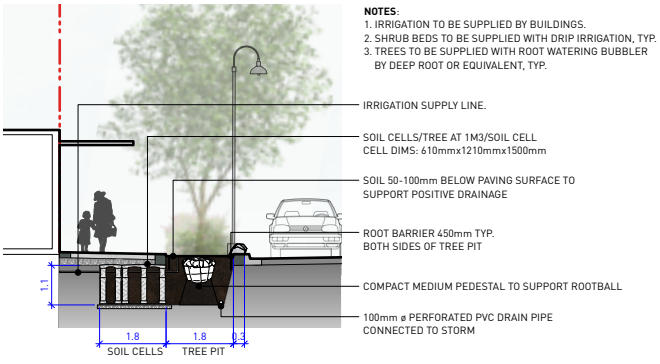


Figure 2.12.5 c) Typical cross-section with soil cells added underneath sidewalk.

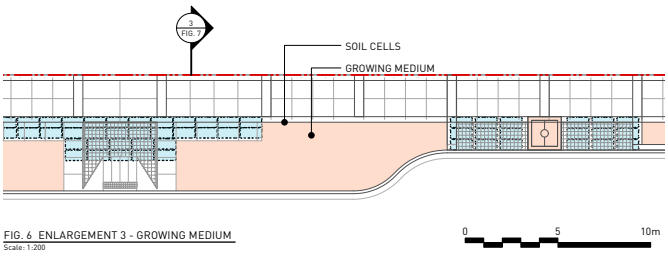


Figure 2.12.5 d) Typical plan view with soil cells creating continuous soil connections between planters underneath the boulevard and mid-block crossing space.

TREES & PLANTINGS

2.12.6 SIGHTLINES

Plantings at mid-block and intersection curb bump-outs provide a valuable opportunity to enhance streetscapes with larger and more dynamic horticultural displays. Wider planting areas are supportive locations for coniferous plantings and clustered street trees and are recommended on most mid-block bump-outs and intersections within the *Streetscape Standards (Section 3)*. However, these dense clusters should not obstruct important sight triangles to ensure visibility amongst approaching vehicles and pedestrian and cyclist crossings.

As part of the *Public Realm and Streetscape Design Guidelines,* a *Sight Distance Guidelines Memo* was created to provide guidance on sight triangle calculations and planting guidance within sight triangles. These guidelines support safe sightlines while still supporting coniferous and clustered plantings at mid-blocks and intersections.

2.12.5 SIGHTLINES APPLICATION

a. Detailed landscape and civil designs of intersections and mid-block crossings should comply with the *Sight Distance Guidelines Memo* (Appendix B) to determine sight triangles. Sightline calculations should be included in both civil and landscape plans to ensure compliance at construction and planting.

b. Planting beds at intersections should be a minimum of 6m in length to support sightlines and larger sized planting areas for desired street tree guidelines.

c. Planting beds at mid-block crossings should comply with dimensions confirmed by civil engineering's application of the *Sight Distance Guidelines Memo*. Approximate TAC guidelines distances of 10–15 m from crossing to parking stall are included in *Streetscape Standards* as approximate distances only.

d. Shrub planting within sight triangles should be no taller than 450 mm.

e. Street trees are supported in sightlines where canopy branch clearance meets a minimum of 1.6 m from road height.

f. Coniferous tree planting should only be used downstream of a crosswalk, and the stem should be set back at least 6 m from the crosswalk approach.

g. Mature coniferous trees should be pruned to achieve minimum 1.6 m clear heights from road once canopy width increases.

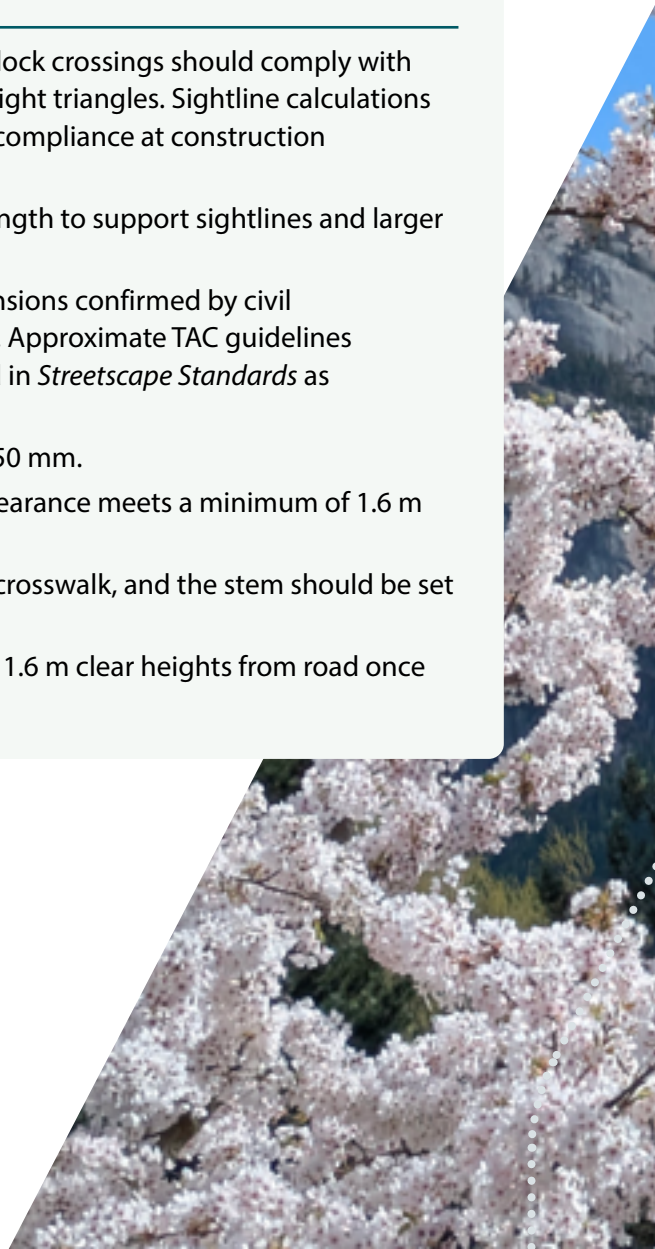


Photo: Alex Preston

2.13 STORMWATER MANAGEMENT

Downtown Squamish is an oceanic climate subject to high volumes and long stretches of rainfall. Downtown's high-water table and proximity to watersheds and coastal marine habitat make stormwater management an important consideration in streetscape design.

Bioswales play an important role in stormwater management, benefiting ecological assets and reducing storm water volumes.

OCP GUIDING POLICY

Green Infrastructure	21.3 a, 21.4 a & b
Water Quality	10.16 a
Eco-Assets	10.7 a

Photo: Kerry Hamilton

STORMWATER MANAGEMENT

STORMWATER MANAGEMENT MAP

This map provides initial guidance on where existing ditches should be infilled, restored, retained or updated to a bioswale for the purpose of these guidelines and creating continuous stormwater management assets.

STORMWATER MANAGEMENT

2.13.1 DITCHES

Downtown Squamish streetscapes currently manage stormwater through ditches, that are narrow channels dug into the ground along roadways. Given Downtown's proximity to watersheds and coastal marine habitat, many of these ditches are either directly connected to fish-bearing waters or can overflow into fish-bearing waters during storm events. As a result, yellow, orange and red ditches are classified under Development Permit Area 1 (DPA 1) for their connectivity and flow to fish-bearing waters and include protection and compensation recommendations in line with provincial and/or federal regulations. Downtown Squamish includes a number of ditches that are subject to DPA 1 protection or compensation.

Downtown ditches are streetscape assets for storage and treatment of stormwater. Ditches typically contain grass and require seasonal maintenance to mow and remove invasives. They can also require long-term maintenance to address silt buildup overtime. Ditches can pose accessibility challenges in urban environments and typically require a larger cross-section of area than a street-tree boulevard creating conflicts with streetscape redevelopment. Ditches typically are not large enough to support stormwater needs so most streetscape redevelopment will still require stormwater utility infrastructure.

2.13.1 DITCHES APPLICATION

a. All green and yellow ditches Downtown are supported for infill or bioswales through streetscape redevelopment subject to DPA 1 permitting for yellow ditches.

b. All orange and red ditches Downtown should remain and or be restored in accordance with the Stormwater Management Map.

c. Ditch removal or maintenance of yellow, orange or red ditches require DPA 1 permitting.

d. Green and yellow ditches should be redesigned into bioswales in accordance with the Stormwater Management Map and subject to DPA 1 permitting for yellow ditches.

e. Ditches should be used for snow storage during winter months.

Bioswales have four functions for stormwater management: collection, conveyance, filtration, and infiltration. These four traits reduce and delay peak runoff volumes and treat stormwater quality.

2.13.2 BIOSWALES

Bioswales, unlike ditches are purposely engineered to slow and filter stormwater before it enters the stormwater system. This helps long-term use and maintenance of stormwater systems and improves water quality when entering watercourses and marine ecosystems. Downtown bioswales are not designed to address conveyance or all stormwater detention capacity needs of a streetscape and will likely not replace the need for utility stormwater infrastructure. Bioswales are stormwater and environmental assets for streetscapes and should adhere to the following guidelines.

2.13.1 BIOSWALES APPLICATION

a. Bioswales should be located in accordance with the *Stormwater Map*.

b. Bioswale design should comply with the bioswale detail in *4.2 Streetscape Spec Sheets.*

c. Where on street parking is adjacent to bioswales, a 2 m wide pathway should be included every 15 m along the bioswales to allow for accessible access across.

d. Bioswales should be connected to stormwater infrastructure.

e. Bioswales should be designed with bioswale supported plants, shrubs, and trees identified in *2.12.2 Street Trees & Plantings Detailed Table Plant List*. Planting sizes should be medium to large to support full coverage at the time of planting and reduce maintenance needs.

f. Bioswale should be irrigated by the adjacent development.

g. Bioswales should be used for snow storage during winter months.

h. Bioswales to be maintained by fronting development.

i. Bioswales should be registered as a streetscape utility.

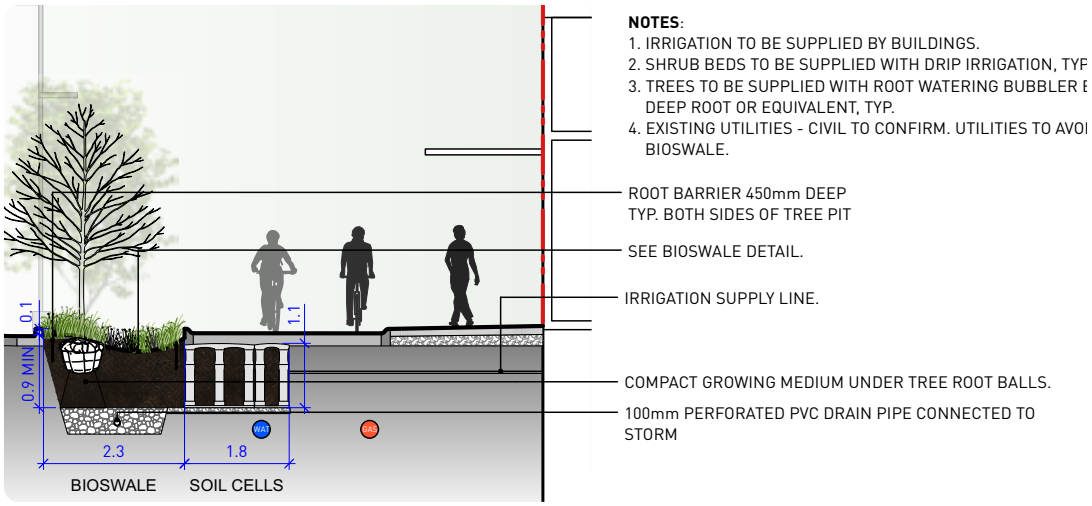


Figure 2.13.1) Bioswale detail

2.14 PUBLIC ART

Downtown Squamish streetscapes are home to a variety of forms of public art including sculpture, mosaic, murals, street furniture and painted crosswalks. Public art inventory includes public artwork from both public and private property.

Public art is fundamental to Squamish's identity, vitality, and sense of pride and place. Downtown Squamish should continue to be reinforced as the community's arts, culture, and entertainment hub.

OCP GUIDING POLICY

First Nations Culture & Heritage	27.1 a & 27.2 c
Creative Community	27.3 a
Public Art	27.8 a & d
Heritage Conservation	27.9 a

POLICY & RESOURCES

Squamish Public Art Virtual Map

District of Squamish Public Art Policy 2020

Arts, Culture & Heritage Study 2020

Photo: Melanie Lazelle

PUBLIC ART

2.14.1 PUBLIC ART

Public art is defined in the District of Squamish Public Art Policy as original art that is selected, commissioned, created, or donated for location in the public domain. Public art can be permanent, transitory, functional, integrated, or contextual to the site and can incorporate a wide range of art forms. Public Art can engage people as viewers or participants and may be designed for celebratory or memorial purposes. For the purposes of streetscapes, this section does not include performance, literary, industry (e.g. film) and other types of non-visual art that occur in public places.

Squamish culture is celebrated through public art with streetscapes that enhance our connection with our past, present and one another. There are many opportunities to continue integrating public art into streetscapes in both functional and decorative forms. *Downtown Squamish Business Improvement Association* and *Squamish Arts*, have worked to create a vibrant, arts-centric Downtown core, that is brought to life through both temporary and permanent art installations. District of Squamish Downtown Development Permit Guidelines encourage public art consideration through redevelopment, leading to murals, sculptures and public art embedded into building materiality. Capital streetscape redevelopment projects have contributed to the addition of crosswalk murals. This section is designed to provide guidance on Streetscape Public Art creation and retention.

2.14.1 PUBLIC ART APPLICATION

a. Streetscape redevelopment should retain or restore existing public art. Current public art can be found on Squamish Arts: **Squamish Public Art Virtual Map.**

b. New public art through redevelopment should follow the *Commission a Public Art Project* guidance found on Squamish Arts website and should include both ownership and maintenance considerations as outlined in the District's *Public Art Policy*.

c. Woonerf, closed streets, commercial mid-blocks, plaza spaces and corner plazas identified on the *Plaza & Pedestrian Map* should integrate public art in their designs.

d. Redevelopment adjacent to the Gateway Plaza intersection should consider a large public art installation to identify the Gateway to Downtown Squamish.

e. District led streetscape redevelopment capital projects should include integration of public art considerations in 2.14.3.

f. Coast Salish public art should include the Squamish Nation community in public art selection, place naming and design.

g. Crosswalk public art murals should use MMA or thermoplastic to ensure longevity.

PUBLIC ART

2.14.2 PUBLIC ART THEMES

Public art is often a reflection of our culture, it can form part of our public history and collective memory. Squamish culture should be celebrated in streetscapes through the use of natural, historical, and cultural public art themes to strengthen connection to place and promote connection with past, present and one another. The District of Squamish's municipal collection of public art in Downtown Squamish consists of pieces that are temporary in nature (e.g. crosswalks and small temporary murals), to more permanent pieces (e.g. sculptures and mosaics). Some overarching themes can be easily identified within Squamish's existing public art collection and should be considered in public art applications.

2.14.2 PUBLIC ART THEMES APPLICATION

a. Downtown public art should consider art form examples provided in 2.14.3.

b. Some streetscapes or intersections should support consistent themes while others should promote a diversity of themes creating a welcoming sense of place in the Downtown public realm for all.

c. Downtown public art should consider the following themes:

Sense of Place

i. Highlight community heritage and culture through street design elements and features.

ii. Draw inspiration from existing public art and the built environment and incorporate in future design.

iii. Promote the use of public art features in wayfinding.

Functional

iv. Integration of public art into infrastructure including, seating, bike racks, planters, lighting, paving, crosswalks, wayfinding, façade improvements etc.

Inclusivity

v. Design and build public spaces that are welcoming to all cultures, ages, abilities and identities.

Gathering

vi. Integrate art into public gathering patios, parklets, plazas and seating spaces to encourage people pause and enjoyment within the urban setting.

Nature

vii. Public art can draw inspiration from Squamish's unique geographic features and natural environment.

Coast Salish Connection

viii. First Nations culture and heritage has been unwritten for generations, and art is an important tool to enhance cultural knowledge, generate awareness and to showcase the Coast Salish style.

2.14.3 PUBLIC ART EXAMPLES

MURALS

Photos courtesy of Squamish Arts and Downtown Squamish BIA.

Photo: Nina La Flamme

Photo: Melanie Lazelle

Photo: Melanie Lazelle

Photo: Melanie Lazelle

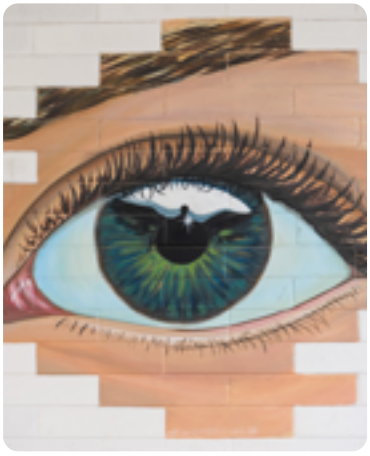


Photo: Brian Aikens

PUBLIC ART

2.14.3 PUBLIC ART EXAMPLES

SCULPTURE

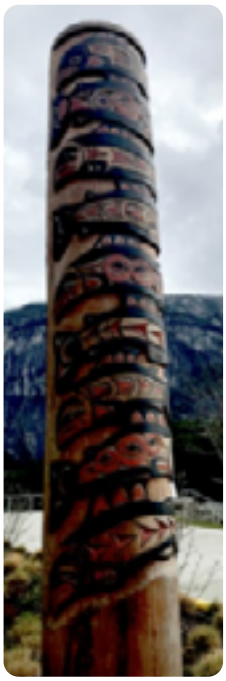


Photo: Brian Aikens

Photo: Brian Aikens

STREET BANNERS PROGRAM

Photo: Nicole Gurney

Photo: Nicole Gurney

PUBLIC ART

WINDOW TREATMENT AND HYDRO ART

Photo: Brian Aikens

Photo: Melanie Lazelle

Photo: Melanie Lazelle

LIGHT ART

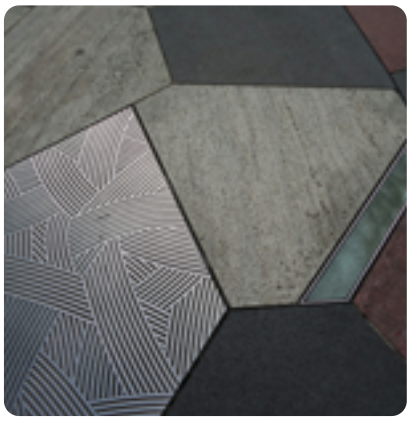
Photo: Melanie Lazelle

PUBLIC ART

2.14.3 PUBLIC ART EXAMPLES

DECORATIVE CROSSWALK

PAVING



WATER FEATURE

PUBLIC ART

GATEWAY ART

Photo: Brian Aikens

PLANTER BED ART

STREETSCAPE INSTALLATION/ACTIVATION

Photo: Nina La Flamme

2.15 STREET LIGHTING

Downtown Squamish is surrounded by the natural environment. Downtown streetscapes should find a balance between creating safe, activated and lit streetscapes and pathways while protecting its surrounding natural environment from light spill and light pollution.

Street lighting in the public realm plays a crucial role in fostering a sense of place, security, safety and accessibility.

OCP GUIDING POLICY

Site Circulation, Accessibility + Adaptability 36.5 a

Exterior Lights 42.7 a

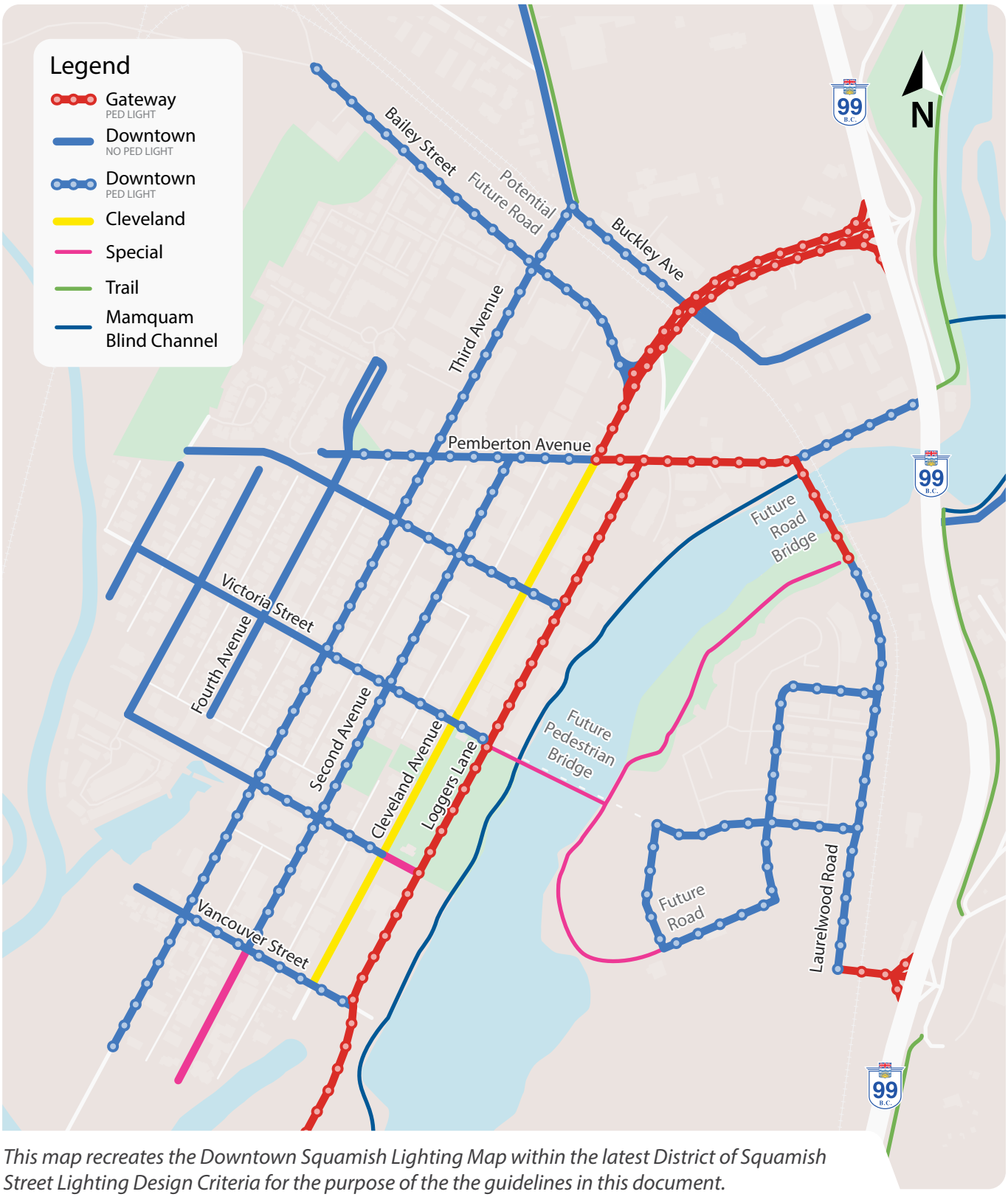
POLICY & REGULATION

District of Squamish Streetscape Lighting Design Criteria (2025 or as amended)

Photo: Nicole Gurney

STREET LIGHTING

STREET LIGHTING MAP



This map recreates the Downtown Squamish Lighting Map within the latest District of Squamish Street Lighting Design Criteria for the purpose of the the guidelines in this document.

STREET LIGHTING

2.15.1 STREET LIGHTING

Downtown street lighting fixtures were determined as part of the *District of Squamish Streetscape Lighting Design Criteria Guidelines*. Streetscape lighting Downtown generally refers to lighting of public roadways, bicycle lanes, sidewalks, cross-walks, and multi-use pathways. Lighting considerations Downtown can also include public parking lots, parks, plaza spaces and mid-block pathways.

2.14.2 PUBLIC ART THEMES APPLICATION

a. Downtown street lighting locations should conform with the *Street Lighting Map*.

b. Lighting design for streetscapes and trails should conform to the *District of Squamish Street Lighting Design Criteria* as amended.

c. Off-street lighting design fixtures in public plazas and mid-blocks should consider the *4.1 Streetscape Elements Catalogue* sections for approved lighting products.

d. Special lighting locations should consider current lighting standard details and/or *4.1 Streetscape Elements Catalogue* fixtures to confirm lighting design at District discretion.

e. Where there is lighting conflicts with existing above ground hydro utilities, existing BCHydro lights should be removed when new lighting poles can be installed, or new lighting should be cash-in-lieu at District discretion.

Photo: Kerry Hamilton

2.15.2 BANNERS & FLOWER BASKETS

Cleveland Avenue light posts also function as public art and beautification opportunities with the addition of seasonal banners, flower-hanging baskets and holiday lighting. Banners are managed by the District's Banner Program in partnership with Squamish Arts while Public Works provides new flower baskets each year and installs seasonal holiday lighting.

2.14.2 BANNERS & FLOWER BASKETS APPLICATION

a. All new Cleveland Avenue Lighting poles should include two banner and basket arms as specified in the *District of Squamish Street Lighting Design Criteria* Cleveland Street Light Pole Assembly standard detail.

b. Decorative string lighting on Cleveland Avenue should not be supported pole to pole unless pole bases have been reconstructed to a type C base. Decorative lighting can be supported from pole to building across the sidewalk and should be designed for at Development Permit.

c. All new gateway light poles should include one banner arm as specified in the *District of Squamish Street Lighting Design Criteria* Gateway Street Light Pole Assembly standard detail.

d. The banner program currently extends to some light poles outside of Gateway and Cleveland Avenue and should be discontinued as streetscapes redevelop and new poles are installed.

Photo:Nicole Gurney

2.16 UNDERGROUND ELECTRICAL UTILITIES

Undergrounding overhead electrical utilities enhances and improves the use of public spaces, and supports more space for development, street trees, furnishing and lighting.

REGULATION

Subdivisions and Development Control Bylaw – Roadway Lighting and Electrical Power

2.16.1 CURRENT UNDERGROUNDING AREA

The District Subdivision and Development Control Bylaw No. 2649, 2018 (S&DC Bylaw) requires undergrounding of all shallow utilities along new or redeveloped frontages. Shallow utilities refer to Fortis pipes, fibre optic cables and electrical utilities such as BC Hydro, Telus, and Shaw. Electrical utilities are predominantly an overhead utility within Downtown Squamish, with several poles offering BC Hydro street lighting.

Redevelopment of Downtown Squamish has outlined several conflicts with keeping both overhead electrical utilities and undergrounding electrical utilities. The District recognizes that undergrounding all electrical utilities along all District frontages may not always be feasible, economically viable, or supported by the utility authority. Alternatively, undergrounding utilities offer many benefits to municipalities and redevelopment, especially in dense urban areas. Clearance space used for overhead utilities when undergrounded, can be used to increase building areas, allow for larger street trees, remove pole conflicts in streetscape design, and support uniform safe lighting standards. Overhead electrical utilities can be impacted by weather events, collisions and trees, causing electrical power disruptions to the community. Tree canopies are routinely pruned, topped and trimmed by BC hydro to reduce potential hazards and conflicts with *2.12 Street Trees & Plantings* guidelines.

The District of Squamish has worked with BC Hydro to provide guidance on where undergrounding of electrical utilities should be supported in Downtown Squamish (refer to *Undergrounding Electrical Utilities Map*) and considerations on how the undergrounding process should work through Downtown redevelopment. This guidance does not overrule the S&DC Bylaw or BC Hydro authority and is intended to be use as a tool to help navigate and support the complexity of considerations for undergrounding electrical utilities through redevelopment.

UNDERGROUND ELECTRICAL UTILITIES

UNDERGROUNDING ELECTRICAL UTILITIES MAP

This map reflects the current extent of overhead electrical utilities in Downtown Squamish and provide guidance on the District and BC Hydro's shared understanding on where to prioritize undergrounding above ground electrical utilities.

UNDERGROUND ELECTRICAL UTILITIES

2.16.1 CURRENT UNDERGROUNDING AREA

2.16.1 CURRENT UNDERGROUNDING AREA APPLICATION

a. Undergrounding of all overhead electrical utilities should be required for any redevelopment within the current undergrounding area on the *Undergrounding Electrical Utilities Map*.

b. Undergrounding of electrical overhead utilities are recommended on a block distance basis to reduce guidewires and ensure electrical stability of remaining overhead lines. Blocks in Squamish range from 80 m (east-west) to 180 m (north-south). Regardless of redevelopment frontage distance, the minimum distance for undergrounding is a block length or a minimum length of 100 m.

- **i.** Large rezonings with 40% frontage or more of a block should secure undergrounding overhead utilities for the complete block.
- **ii.** Smaller rezonings with 39% frontage or less of a block, or development permits only should underground the minimum 100m distance.

c. Undergrounding may require additional on-street and off-street area for underground* or above ground** infrastructure needs. Underground designs should be considered at the earliest stage of development application (e.g. Rezoning or Development Permit) when development exceeds 70% lot coverage and/or have less than 3 m building setbacks along existing above ground electrical utilities, to ensure appropriate space and right ways are considered and can be accommodated in the design.

d. Development on Second Avenue should be informed that the BC Hydro line is a feeder line, which is the highest line before transmission line, and will be more costly to underground than other overhead utility lines Downtown.

e. Laneways are too narrow to support the infrastructure needs for overhead retention and should be undergrounded.

BC Hydro Details

* BC Hydro underground infrastructure can include but is not limited to: vista switchgear, control box, service box, and transformer junction box.

** Above ground infrastructure can include but is not limited to: ground pad mounted transformers, new poles, downhaul guy wires and anchors to support dead-end poles.

All underground and above ground infrastructure will require BC Hydro Approval and Right of Ways.

UNDERGROUND ELECTRICAL UTILITIES

2.16.2 FUTURE UNDERGROUNDING AREA

Future undergrounding areas outline overhead electrical utilities that are not feasible or necessary outside the current underground area. Streetscapes can be designed and constructed to accommodate existing overhead electrical utilities until a time where it is feasible to underground them through the use of underground pre-ducting infrastructure.

2.16.2 FUTURE UNDERGROUNDING AREA APPLICATION

a. Redevelopment in the future undergrounding area identified in the *Undergrounding Electrical Utility Map* should still comply with S&DC Bylaw regulations with the following undergrounding frontage guidelines at District discretion:

- **i.** Large rezonings with 40% frontage or more of a block should secure undergrounding overhead utilities for the complete block.
- **ii.** Smaller rezonings 39% frontage or less of a block, or development permits should install underground pre-ducting infrastructure* along the frontage to allow for electrical utility undergrounding in the future.

b. Servicing Agreements should collect cash-in-lieu for remaining undergrounding cost, which may include new light poles and fixtures and additional fees for cabling and conversion work.

c. Pre-ducting designs should consider all details** including pull length, bends and cable pulling tensions to ensure all infrastructure is considered and constructed within the frontage design in alignment with BC Hydro/Telus ultimate plans. This may require development to design pre-ducting designs that exceed the development frontage.

d. When retaining overhead electrical utilities, buildings should comply with code utility clearance requirements, Work Safe BC's limits of approach and **BC Hydro's guide to utility clearance requirements**.

e. Capital redevelopment projects for Downtown streetscapes should consider BC Hydro Beautification Fund application, which offers ⅓ cost sharing program for undergrounding BC Hydro infrastructure within parks, public streetscapes and community redevelopment projects. Cash–in-lieu should be accumulated and used to fund undergrounding projects. **Apply for Beautification Fund** when sufficient funds or budgets have been approved for the work.

BC Hydro Details

* Pre-ducting can also include but is not limited to junction boxes and subs at block ends to pick up overhead lines.

** Pre-ducting lines should be straight to pull cables, and should not have bends. Ducts can have bends, but each bend decreases the total distance the cable may be pulled due to increasing sidewall bending tensions and cable pulling tensions. Before maximum bending tensions are reached, a pull box, junction box or manhole should be installed to allow initial cable install and future maintenance and replacement ability.

All underground and above ground infrastructure will require BC Hydro Approval and Right of Ways.

UNDERGROUND ELECTRICAL UTILITIES

2.16.3 SHALLOW UTILITY LOCATIONS

The S&DC Bylaw requires undergrounding of all shallow utilities along new or redeveloped frontages. This section provides general guidance on where shallow utilities should run along a streetscape cross-section and considerations on where service access infrastructure should be located within the streetscape design.

2.16.3 SHALLOW UTILITY LOCATIONS APPLICATION

a. All shallow utilities should be located underneath the District sidewalk and should not be located within the boulevard area. In some cases when sidewalks are not within the District road right of way, shallow utilities can be located underneath the bike lanes.

b. Shallow utilities should be moved and/or replaced if located within the boulevard area to avoid conflicts with street trees and root growth.

c. Electrical designs for lighting can bend into a boulevard area to connect to a light pole but should run from pole to pole underneath the sidewalk.

d. BC Hydro junction boxes and vaults for service and repair are typically not road rated* and should not be located in bike lanes for safety reasons**. Junction boxes should be located with bends into boulevard areas where there will be minimal conflicts with trees and soil disruption.

e. BC Hydro does not have boxes that are laneway rated. For undergrounding in laneways developments should consider locating junction boxes on private property within parking stall areas. They should not be located in drive aisles or loading or waste removal areas as they are not rated for heavy trucks.

BC Hydro Details

* Distribution lines typically don't run in roadways as the junction boxes are not road rated. The Distribution ducts can run in the roadway, but none of BCHydro boxes for primary distribution are road rated.

Feeder duct banks can run in the roadway, as the manholes required for feeder are road rated. They are 2.2 x 4.4 m in size, so a clear running line would be required to accommodate the manhole. An alternative to the manhole is a 1232 pull box, which can facilitate up to 2 feeder circuits. This box is not road rated and has to be situated in a boulevard where it will not be driven on.

** BC Hydro's preference is for boxes to be in the boulevard as sidewalk installation causes trip hazards and issues with the box lids being damaged during snow removal efforts and bike lanes pose a safety hazard when wet.

All underground and above ground infrastructure will require BC Hydro Approval and Right of Ways.

UNDERGROUND ELECTRICAL UTILITIES

2.16.4 PAD MOUNTED TRANSFORMERS

Pad mounted transformers (PMT) are typically required on each development site. PMTs require specific clearances and design considerations. This section is intended to highlight specific considerations relevant to redevelopment.

Photo: Kerry Hamilton

2.16.4 PAD MOUNTED TRANSFORMERS APPLICATION

a. Transformers should have public street access.

b. Transformers should be located in laneways Downtown, but may be challenging when there are no services in the laneway and when buildings are built lot line to lot line as cables cannot run under buildings.

c. Mid-blocks should be used to bring shared power to laneways and to encourage transformers in laneways.

d. Transformers** require both horizontal and vertical clearances and should be considered on development permit plans to ensure sufficient space is considered.

e. Transformers should be located on private property and not located within the public right of way, some exceptions may apply at District discretion.

f. Transformers should be screened with landscaping and/or integrated within the building design. Landscaping around PMT's should comply with **BC Hydro's Landscaping and padmounted transformer guidelines**.

g. Small to medium size developments should be encouraged to share transformers* when separate developments are being designed and built around the same time to minimize the space constraints of having a PMT on each property.

BC Hydro Details

* Most buildings Downtown are designed with a 300KVH transformer with demand load to spare and should handle 100% parking EV loads for most developments Downtown. These transformer sizes are informed by the electrical consultant and the electrical code conservatively ensuring there is adequate capacity for the worst case scenario. There is typically enough demand load to share transformers amongst smaller developments, however this is rarely done as agreements and right of ways need to be in place prior to occupancy. If the development is going to increase load, they need to contact BC hydro to review their proposal and the available capacity.

** Larger projects will typically install the largest 750/1000 or 1500 KVA transformer (4 m x 4 m). Upgrades may be needed with 100% (sizes come form 75/100/500), but upgrades would not increase size.

All underground and above ground infrastructure will require BC Hydro Approval and Right of Ways.