

1. WELCOME

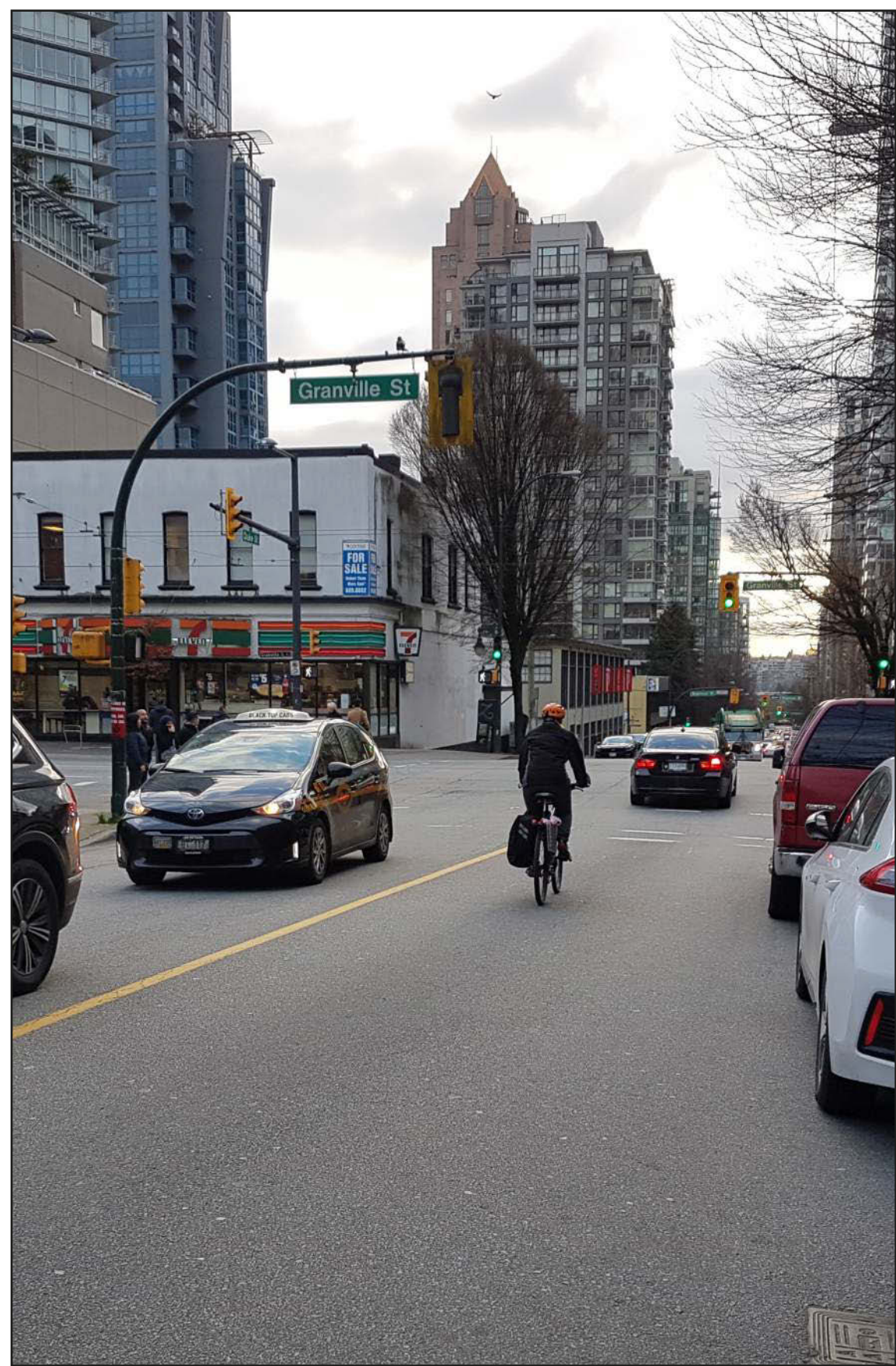
Drake Street Upgrades - Phase 2 | Downtown Bike Network

What's happening?

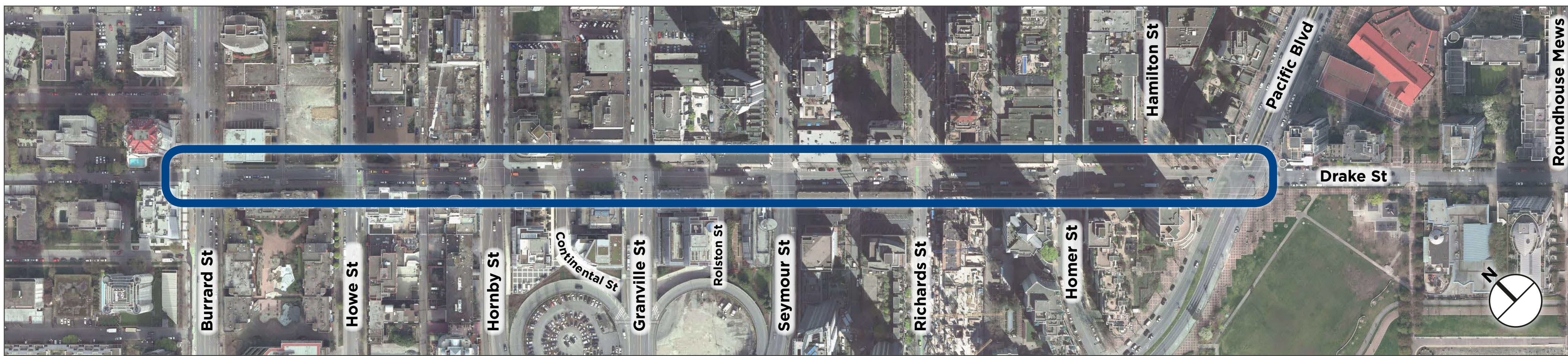
The City is planning upgrades along Drake St. from Burrard St. to Pacific Blvd. The changes will:

- Provide more street trees and improve the ability of the street to manage rainwater
- Improve safety, comfort and accessibility for people of all ages and abilities to walk, roll and cycle
- Provide an east-west cycling route to connect the proposed Granville Bridge Connector with the rest of downtown
- Maintain access for residents and businesses

In spring 2019, we met with key stakeholders, including businesses and residents, and shared preliminary design options. Based on this feedback and further study, the City has developed a recommended design.



Drake St. looking East



Drake St Project Area (Burrard St. to Pacific Blvd.)

Where are we now?

Spring 2019

Phase 1 Open House: Design Options

Design options were presented to stakeholders and the public to gather feedback that was used to develop the design.

Fall 2019

Stakeholder Consultations + Design Modifications

Staff met with stakeholders such as businesses and resident organizations to present the recommended design and gather feedback to revise the design before the next open house.

Early 2020

Phase 2 Open House: Recommended Design

The recommended design is presented to the public and feedback will be used to finalize the design.

Spring 2020

Council Report

Staff will present the final design as well as a summary of feedback from the public, and stakeholders.

2020-2021

Construction

Upgrades to the existing section (Burrard St. - Hornby St.) of protected bike lanes are expected to be delivered through adjacent redevelopment in summer 2020.

Pending Council approval, the extension would be built in 2021.

Tell us what you think!



In Person

Complete a survey at today's open house.



Online

Complete an online survey at vancouver.ca/drake-street-upgrades



Email

Send comments or questions to drakestreetupgrades@vancouver.ca



Phone

Call 3-1-1 to provide comments or questions

Please submit feedback by February 17, 2020

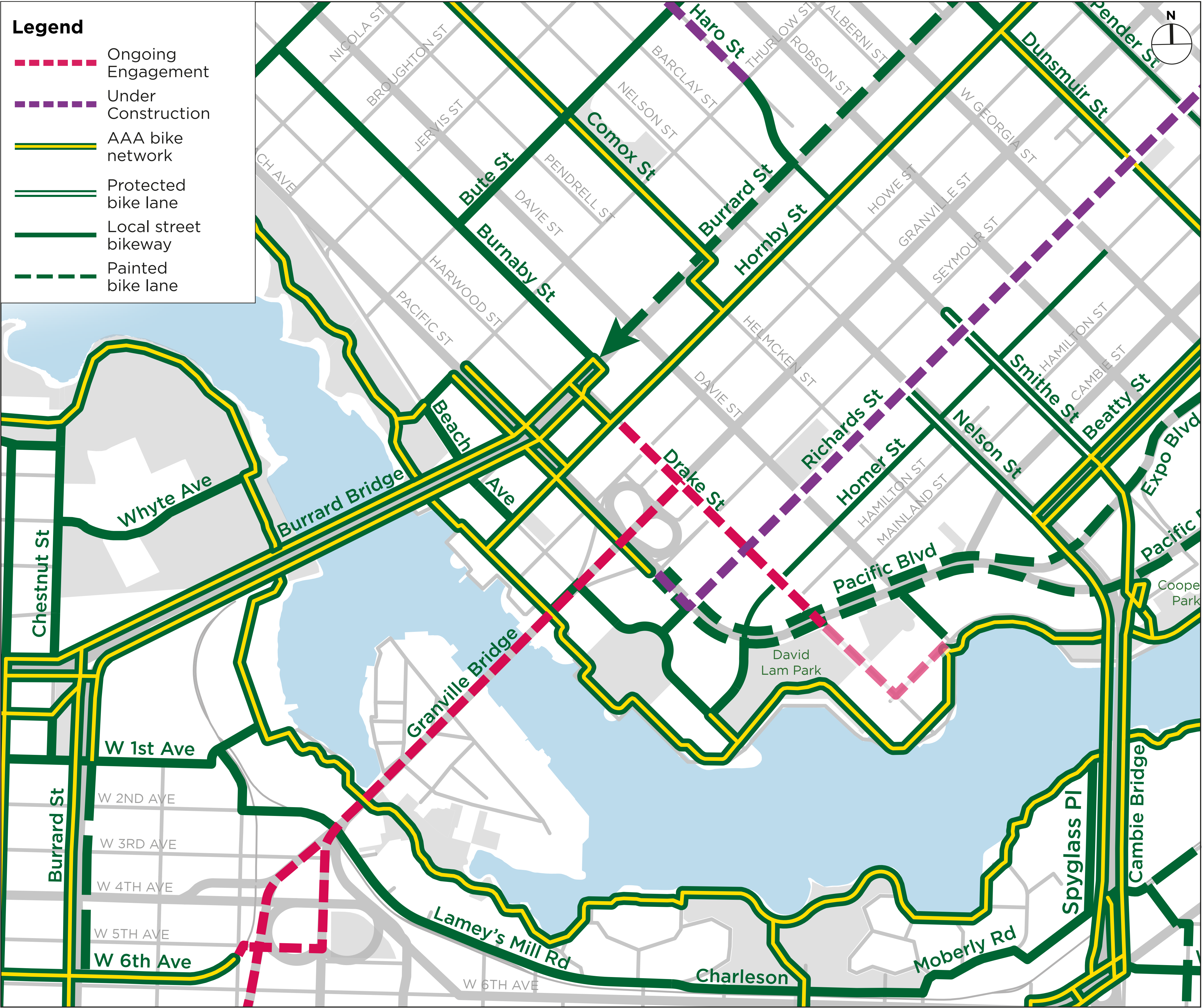
2. INTRODUCTION

Drake Street Upgrades - Phase 2 | Downtown Bike Network

Connections to existing & future cycling routes

Drake Street would provide a safe and accessible cycling connection to neighbourhoods including the West End and Yaletown. It would fill a major gap in the cycling network, linking a number of existing and future routes including Burnaby St., Hornby St., Richards St., and the future Granville Bridge Connector.

Currently, there are no viable cycling routes that connect the north end of the Granville Street Bridge to the rest of downtown. With Granville Bridge upgraded to accommodate safe and comfortable cycling, an east-west route is needed to connect cycling traffic from the bridge to other cycling routes downtown.



AAA (All-Ages-and-Abilities) Transportation Design Guidelines

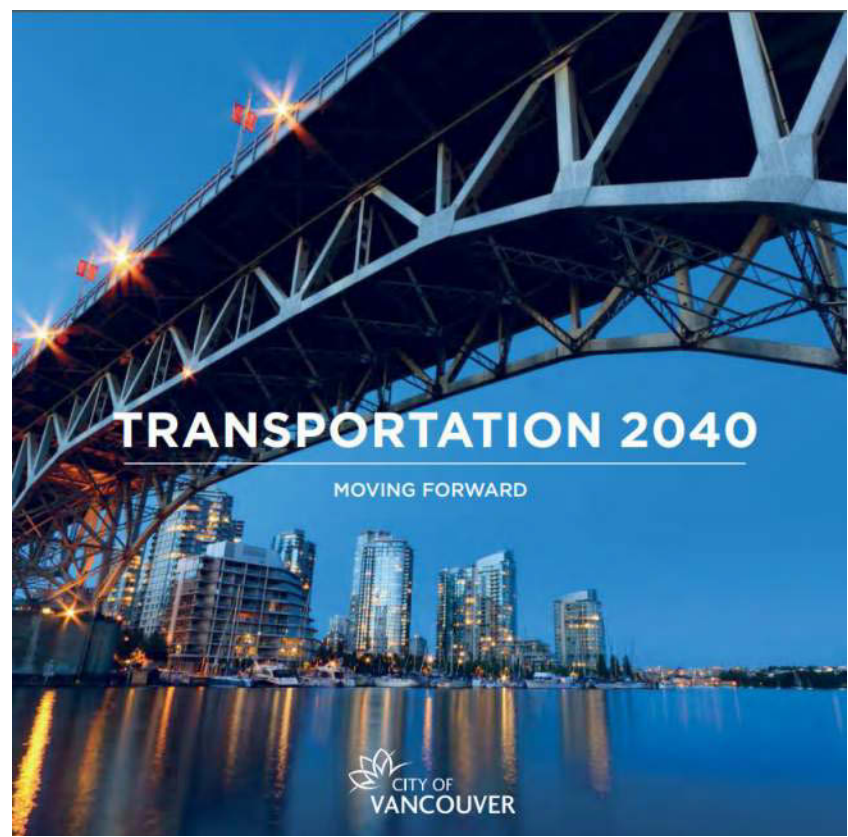
The City has a vision to make cycling safe, convenient, comfortable and fun for people of all ages and abilities. By creating an interconnected network of safe, low-stress bike routes, cycling can become a viable option for a wide range of people including families with children, seniors and new riders.

- Ways to make Drake St. AAA-friendly:
- Create separate spaces for walking and cycling that are protected from motor vehicles
 - Design bike lanes wide enough to allow for comfortable passing
 - Design intersections thoughtfully to reduce conflicts, increase visibility, and provide clear direction of movement

3. POLICY CONTEXT

Drake Street Upgrades - Phase 2 | Downtown Bike Network

TRANSPORTATION 2040



Approved by Council in 2012, Transportation 2040 is a long-term strategic vision for the city that helps guide transportation and land use decisions and public investments for the years ahead. The plan identifies **Drake St. as a critical gap in the AAA cycling network to be prioritized for upgrades.** Policy directions that relate to the Drake Street Upgrades include:

Targets

- 1. By 2040, at least two-thirds of all trips will be made on foot, bike or transit.
- 2. Move toward zero traffic-related fatalities.

Policy directions:

- W 1.1** Make streets safer for walking.
- W 1.3** Make streets accessible for all people.
- W 1.6.2** Explore opportunities to improve local ecology when designing and (re)building streets and other rights-of-way, for example by improving wildlife habitat and stormwater management, restoring native flora, increasing the number, size, and health of street trees, and daylighting lost streams.
- C 1.1** Build cycling routes that feel comfortable for people of all ages and abilities.
- C 1.2** Upgrade and expand the cycling network to efficiently connect people to destinations.
- M 1.3** Manage traffic to improve safety and neighbourhood livability.

CLIMATE EMERGENCY RESPONSE



In April 2019, Council approved the Climate Emergency Response report to increase the City’s efforts to address climate change. One of the six ‘big moves’ to reduce Vancouver’s carbon pollution is to **accelerate the target of making two-thirds of trips by active transportation and transit to 2030.** The report highlights the importance of projects that increase affordable and safe transportation choices and address gaps in the network.

2019 - 2022 CAPITAL PLAN

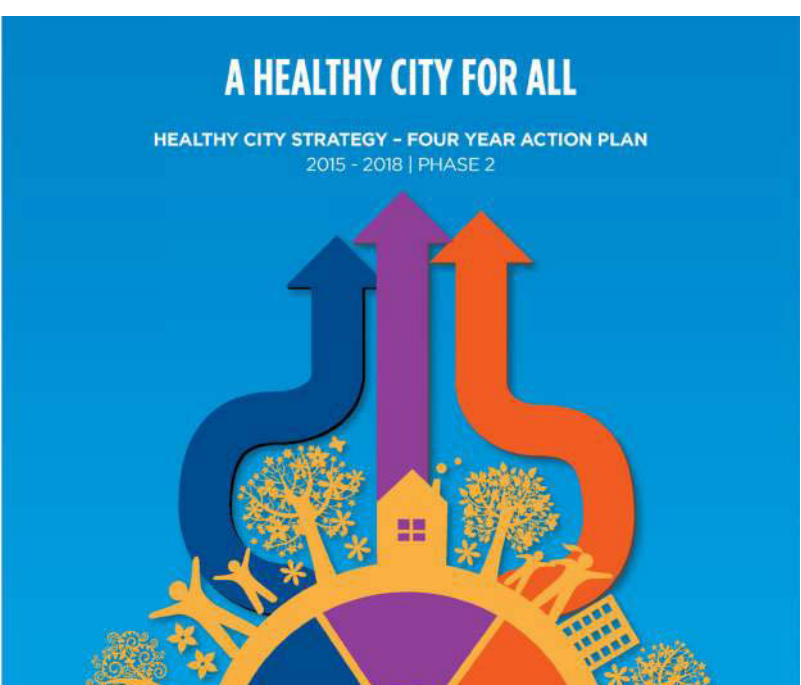
Drake Street is one of the active transportation corridors identified in the 5-year cycling map that was approved in the capital plan to be upgraded and constructed between 2019-2022.

OTHER SUPPORTING POLICIES



Greenest City Action Plan Targets:

- Make at least two-thirds of all trips by foot, bike, and public transit by 2040.
- All Vancouver residents live within a 5-minute walk of a park, greenway, or other green space by 2020.



Healthy City Strategy 2025 Target:

- Increase the percentage of Vancouver residents aged 18 and older who meet the Canadian Physical Activity Guidelines by 25% over 2014 levels.

4. DESIGN APPROACH

Drake Street Upgrades - Phase 2 | Downtown Bike Network

Safety as a priority

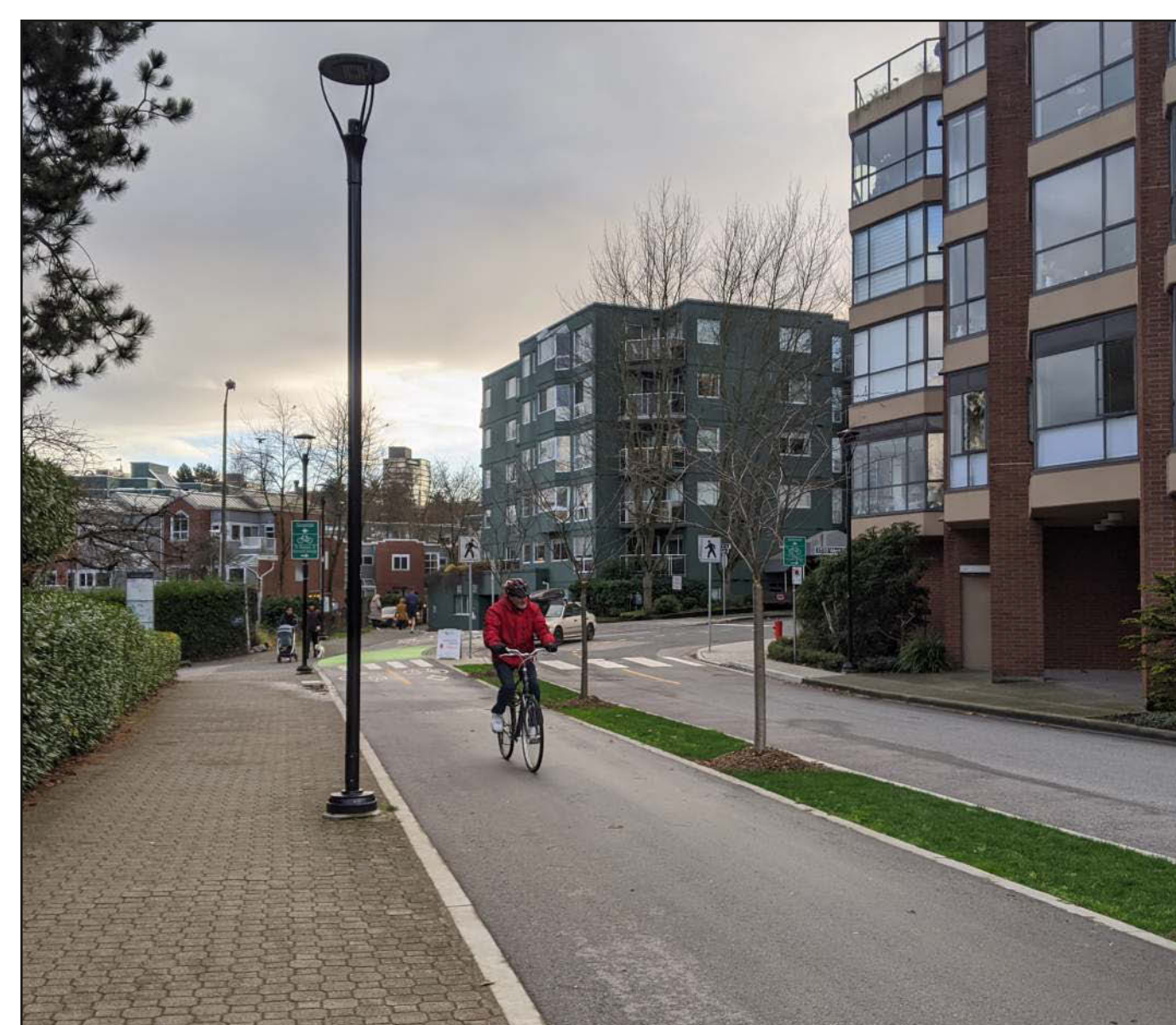
The safety of people walking and cycling is a primary consideration in the design process.

Reduce potential conflict points at intersections

Intersections with fewer turning movements and directions of travel (i.e. one-way streets) have fewer potential conflict points between people walking, cycling, and driving. Bike signals and separate signal phasing for turning vehicles also help reduce the chance of conflict and make intersections safer for people walking and cycling.

Separate walking & cycling traffic from motor vehicle traffic

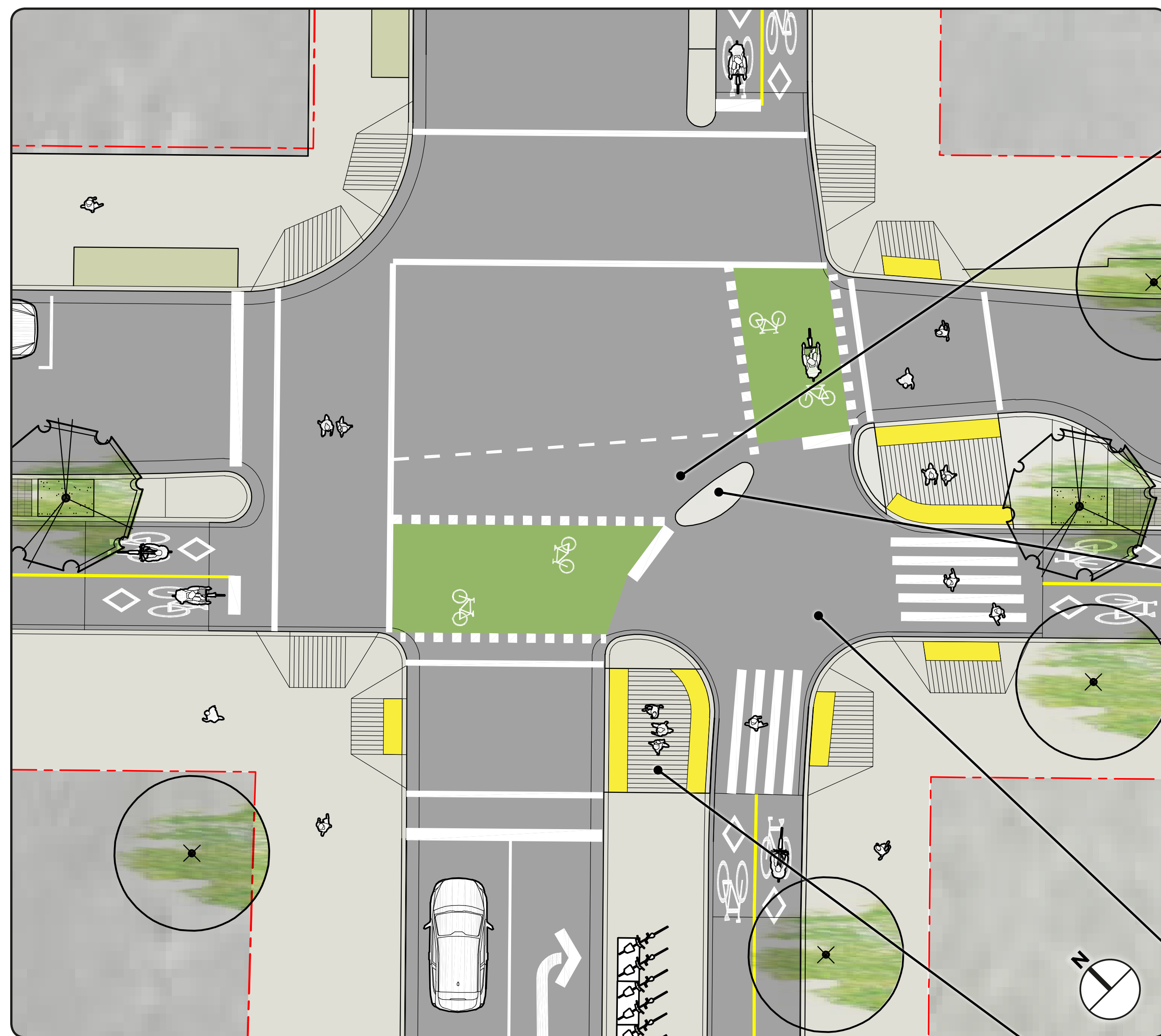
Sidewalks and protected bike lanes make walking and cycling on busy streets much safer and more accessible. They appeal more to people who are interested in cycling, but are concerned for their safety. Protected bike lanes also reduce cycling on sidewalks - a major concern for seniors and people with disabilities.



Separation of walking/cycling/driving on Creekside Dr.

Protected intersections

A protected intersection reduces the likelihood of collisions between vehicles, bikes, and pedestrians by providing separate infrastructure for each mode, reducing high-speed vehicle turns, improving sightlines, and reducing the distance and time during which people are exposed to potential conflicts. They result in a higher degree of yielding to people walking and cycling and provide a higher degree of comfort and safety for people of all ages and abilities.



Proposed protected intersection at Drake St. and Hornby St.

Managing turning conflicts

Protected intersections reduce the time and distance in which people cycling are exposed to potential conflict with motor vehicles, and moderate the speed of turning traffic. Separate signal phases are used where motor vehicle turn volumes are high. Crossings can also be set back and the intersection is designed so people driving have a better view of the bicycle crossing when turning than having to check mirrors.

Corner island

The wider buffer between the bike lane and roadway creates room for a corner island and extends the protected bike lane into the intersection. In addition to providing people cycling a protected place to wait and reducing the length of crossings, this allows for direct and easy turns between protected bike lanes, both right and left.

Bike queue area

People biking are expected to move forward to the stop bar and wait in the queue area in front of the crosswalk. This placement makes bikes more visible to vehicles stopped further back.

Pedestrian refuge

The extra wide buffer between the bike lane and motor vehicle lane at the intersection creates a refuge area for people walking. This shortens the crossing distance and reduces the amount of time that pedestrians spend exposed to motor vehicle traffic as they cross the street. This makes the crossing more safe and comfortable, especially for people who may walk slowly or have mobility issues.



Pedestrian refuge at Burrard & Cornwall



Bike queue area at 1st Ave. & Quebec St.

5. DESIGN APPROACH

Drake Street Upgrades - Phase 2 | Downtown Bike Network

Accessibility

The new design uses a variety of tools to prioritize pedestrians and make it comfortable and accessible for people of all abilities to enjoy the street.

Bevelled curbs

The City has installed bevelled curbs on several AAA bike facilities. These curbs are angled so that they are detectable by people who are visually impaired, but still mountable by a wheelchair.



Bike lanes

Tactile Walking Surface Indicators (TWSI)

TWSIs (also referred to as truncated domes or detectable warning surfaces) alert people with visual impairment that they are entering a potential conflict zone such as the bike lane or roadway.



Refuge island

Accessible Pedestrian Signals (APS)

A locator tone helps guide people with visual impairments to the push button, and chirping/ cuckooing sounds indicate a walk phase.



Protected Intersections

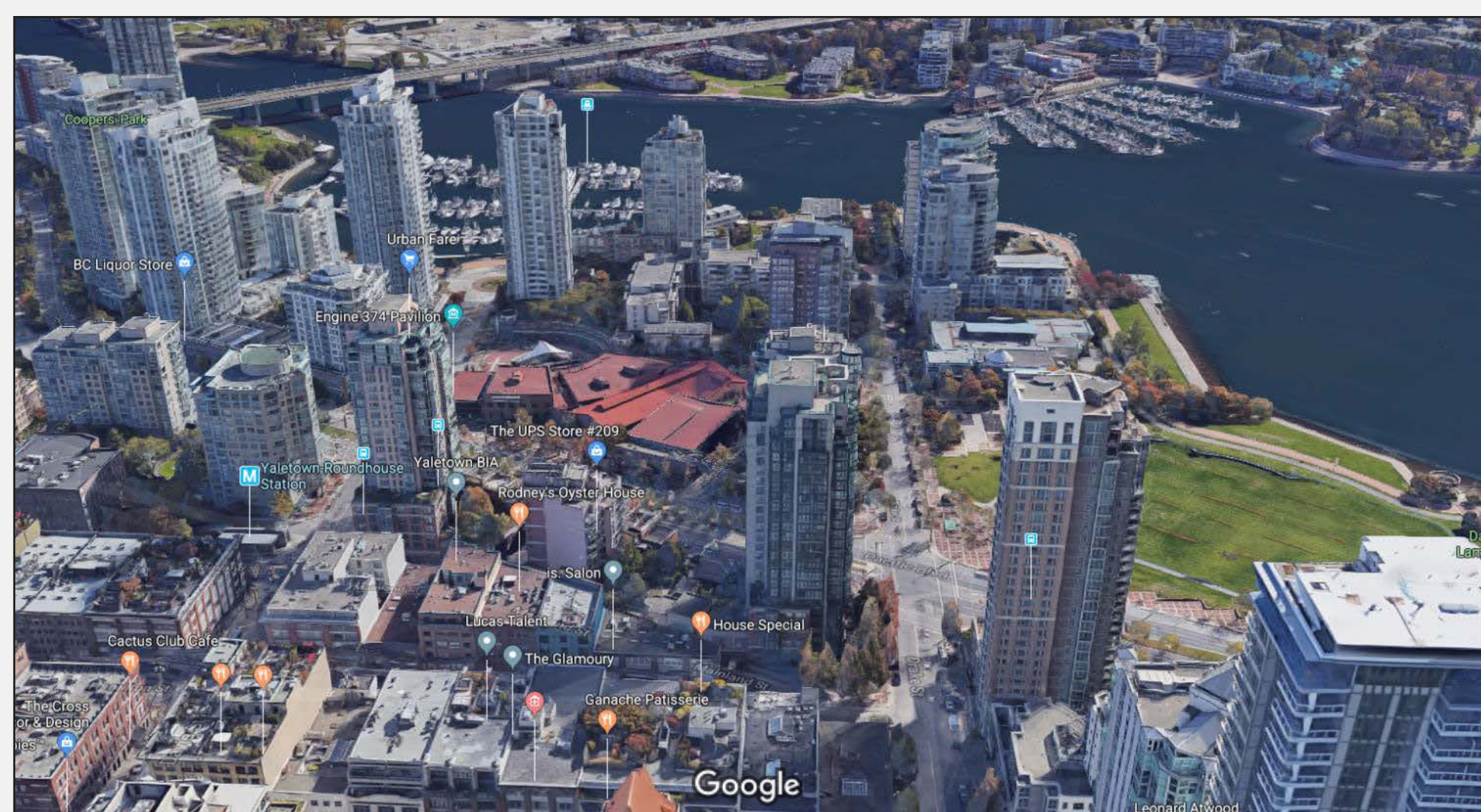
Neighbourhood access and circulation

Retain as much parking and loading as possible



Downtown business areas (like Yaletown) are busy and vehicle parking is important for customers, deliveries and other economic activity. The new design provides for loading and retains as much parking as possible (approx. 50%).

Maintain vehicle access to the neighbourhood

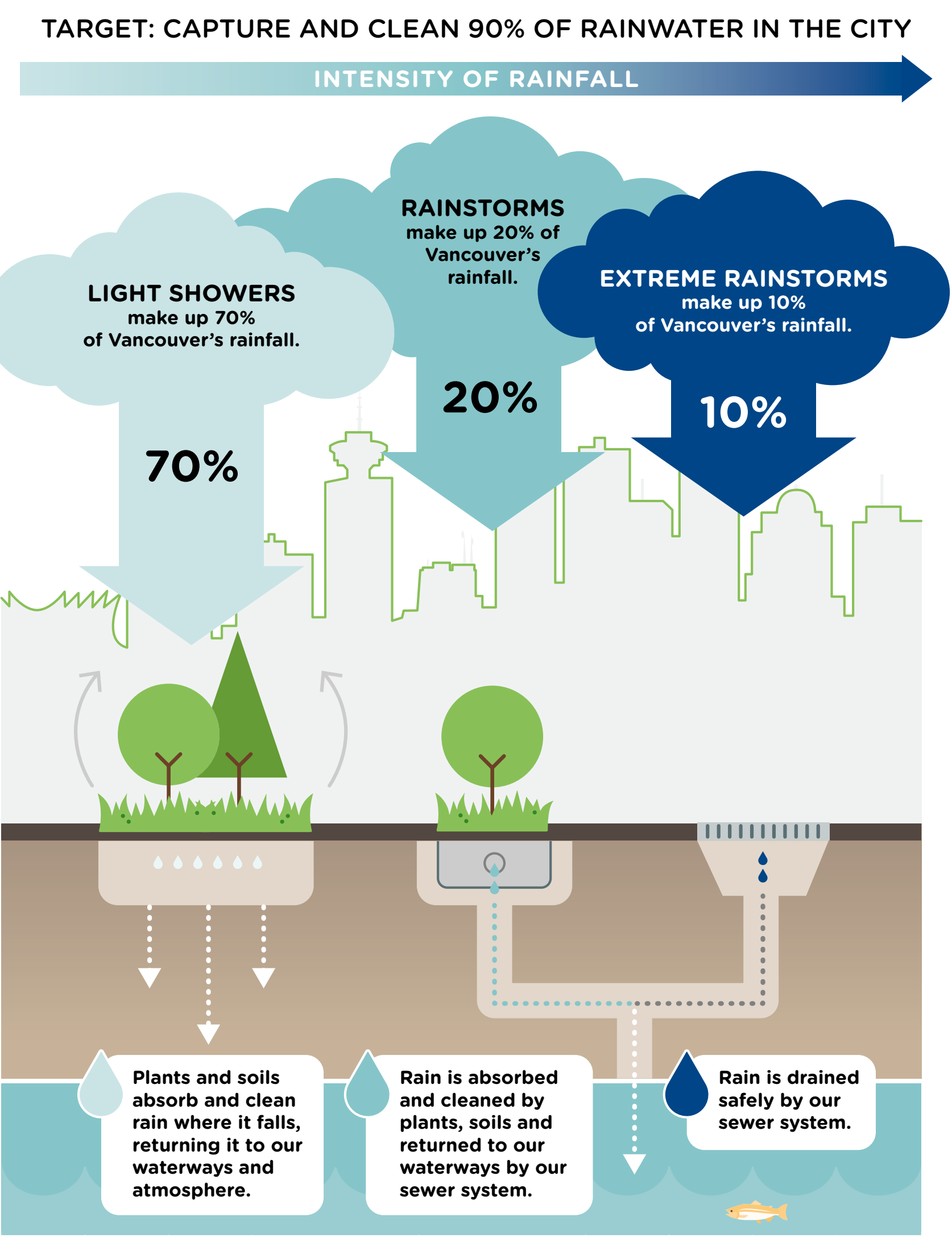


There is a high density of residential uses along the length of Drake St. Efficient vehicle access to these destinations is important for the convenience of residents and customers and to minimize traffic congestion.

6. DESIGN APPROACH

Drake Street Upgrades - Phase 2 | Downtown Bike Network

Green Rainwater Infrastructure



When a street is reconstructed, it provides an opportunity to incorporate green rainwater infrastructure, reducing rainwater pollution, improving the way water is managed, and introducing more green space into the neighbourhood.

What is Green Rainwater Infrastructure?

Green rainwater infrastructure is an approach to urban water management that protects, restores, or mimics the natural water cycle. It uses soils, plants, trees, and built structures such as green roofs, bioswales and rain gardens to capture, store, and clean rainwater before returning it to our groundwater, atmosphere or waterways. It increases the city's resilience to climate change, and supports neighbourhood livability and biodiversity.

How do we work towards capturing and cleaning 90% of the city's annual rainfall?

Tools of Green Rainwater Infrastructure

Bioswales store and filter rainwater using plants and soils. They also create urban wildlife habitat.

Catch basins direct rainwater to the bioswale.

Street sweeper prevents sediment and litter from building up in green rainwater infrastructure such as pervious asphalt and catch basins.

Green streetcar tracks allow grass between tracks to soak up rainwater and percolate into the ground.

Green roofs store rainwater to be released back into atmosphere through evapotranspiration; cool buildings on hot summer days.

Parks and trees pump water into the atmosphere through evapotranspiration.

Permeable paving or concrete percolates water into the ground; prevent pooling, black ice, and overloading of the sewer and drainage system.

Rainwater tree trenches support sidewalks above and provide space for tree roots, soils, and under drains to store, treat, and infiltrate water. Sidewalks can be supported by structural soil or soil cells.

Rain gardens collect urban rainwater from downspouts and use vegetation to store, filter, and infiltrate water; drains prevent flooding and prolonged pooling.

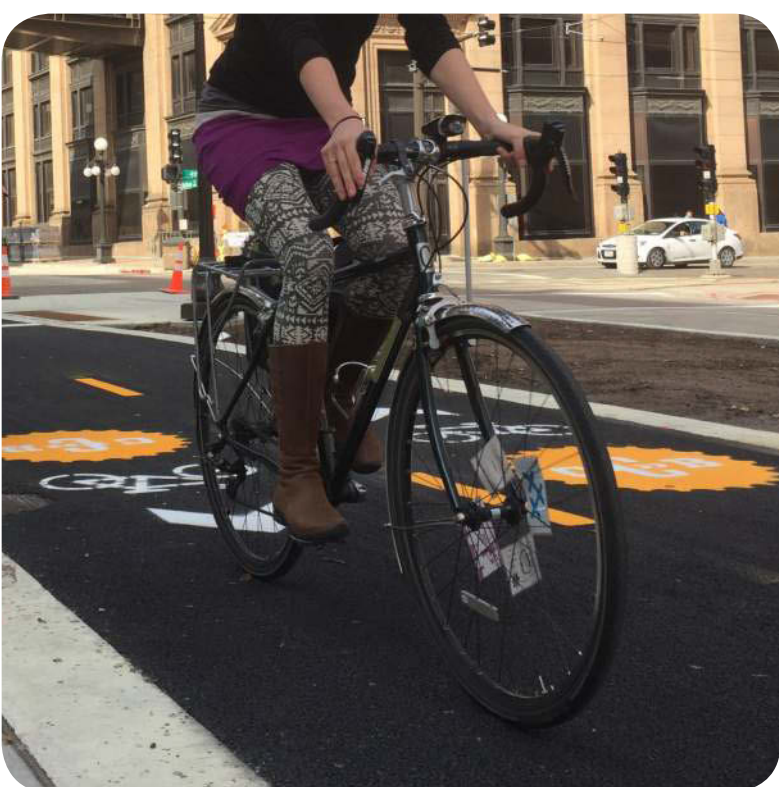
* New infrastructure considered for Drake Street.



Pervious concrete



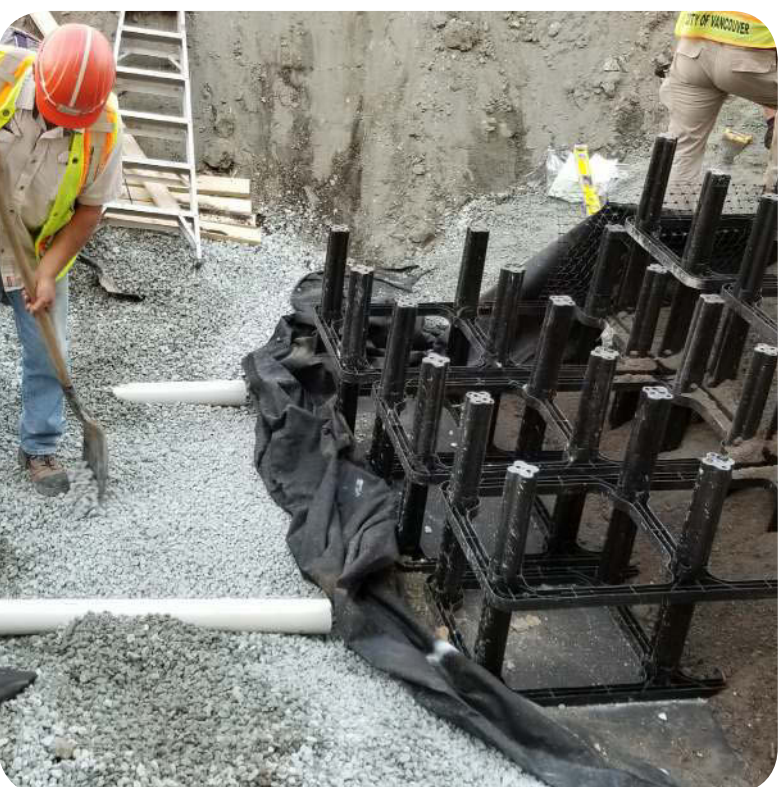
Permeable paving*



Porous bike path



Rain garden



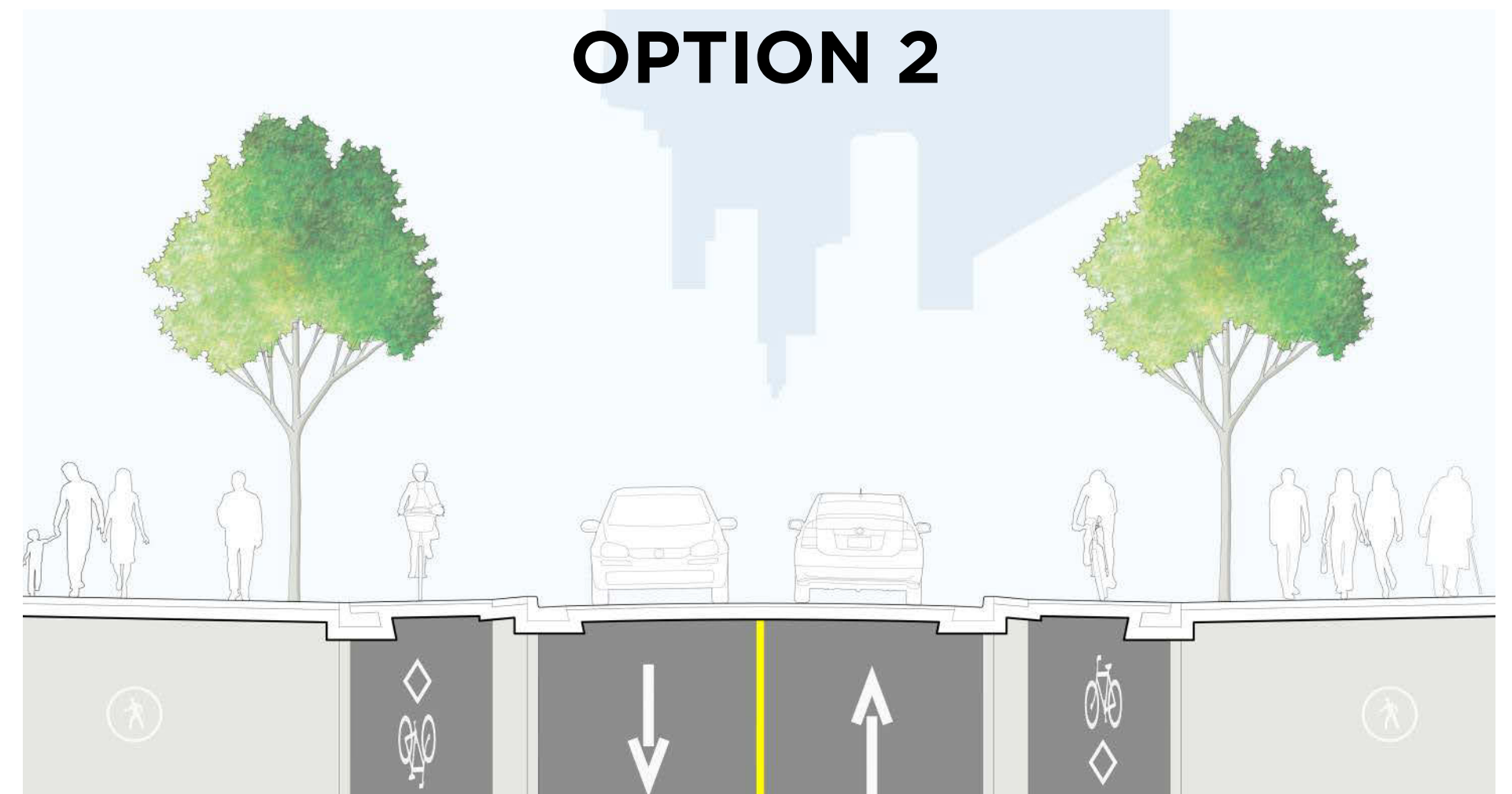
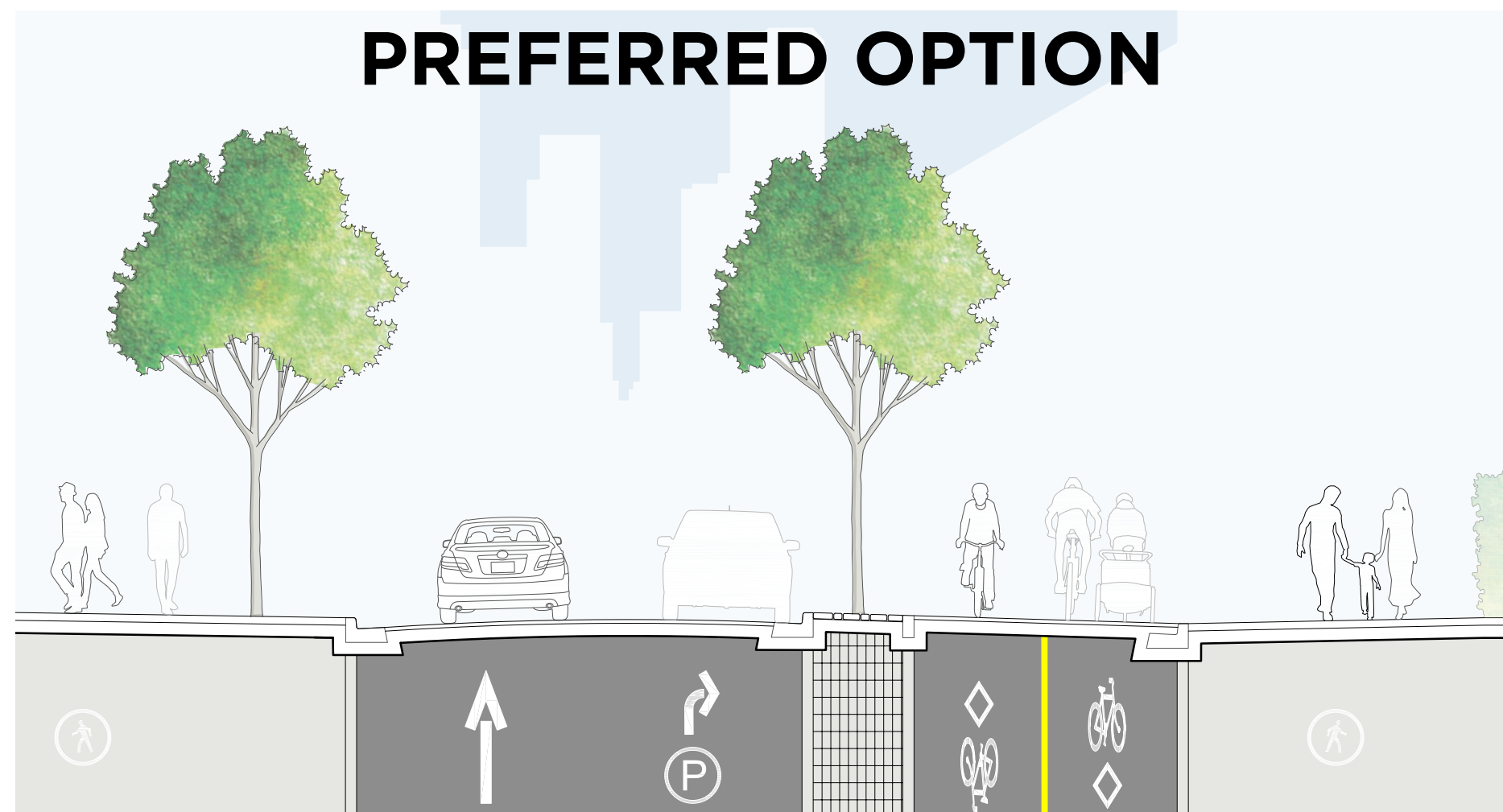
Soil cell rainwater tree trench*

7. WHAT WE HEARD

Drake Street Upgrades - Phase 2 | Downtown Bike Network

Phase 1 - Design Options

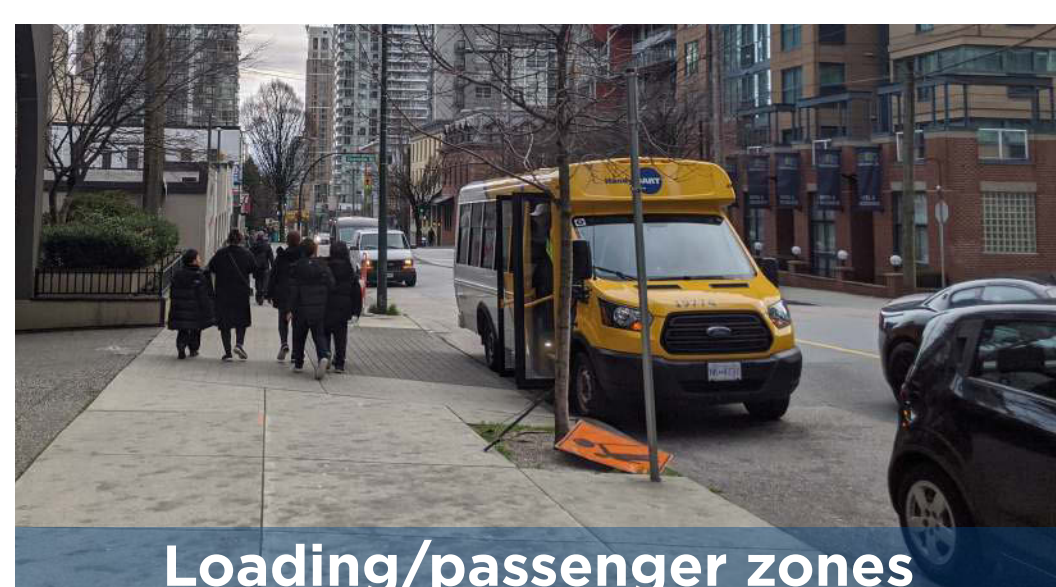
During the first phase of engagement in spring 2019 we heard from stakeholders and the public through meetings, a pop-up, a public open house and an online survey. We presented two design options:



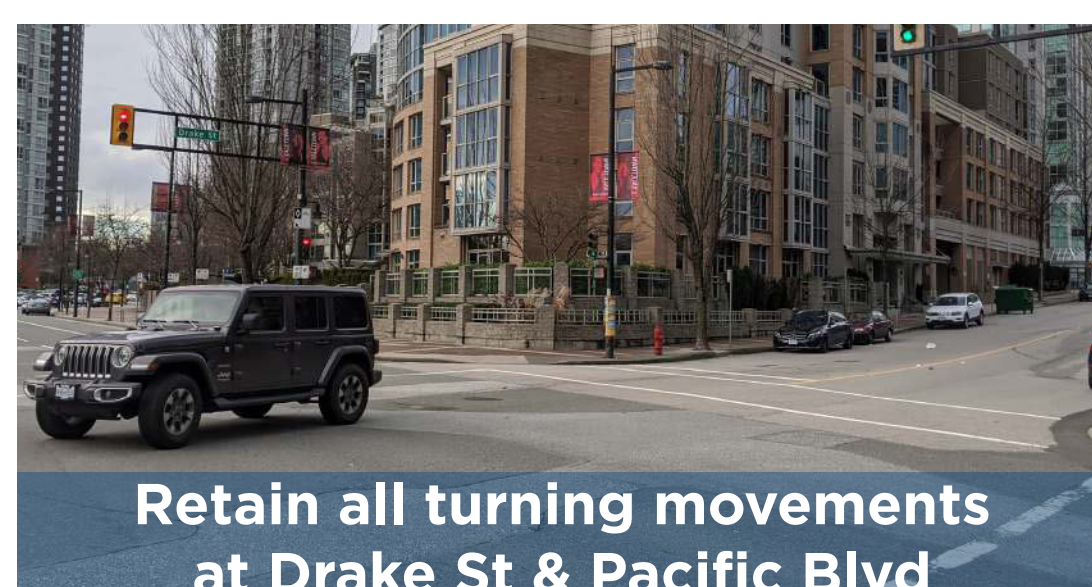
Based on what we learned during Phase 1, staff have continued to refine the **Preferred Option (two-way protected bike lane and one-way eastbound vehicle traffic)** to address feedback and concerns.

- Many of the concerns we heard about one-way vehicle traffic and turn restrictions were located at the east end of the project area. We have assessed these concerns and made **a number of design modifications**.
- Additionally, we reviewed feedback about the importance of providing parking and loading options along Drake St. We worked with stratas and businesses **to provide a mix of parking, loading and passenger zones in each block** and to find new opportunities for zones on adjacent streets.

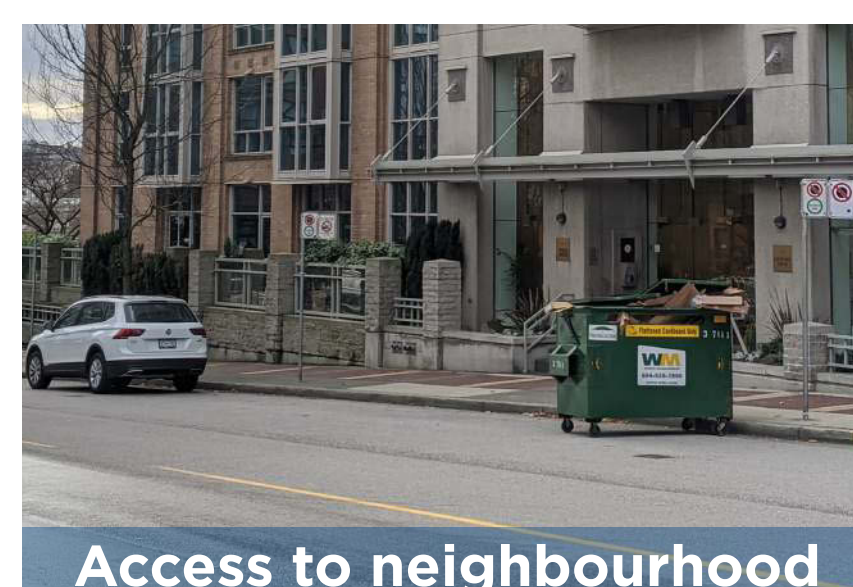
Key Themes from Phase 1



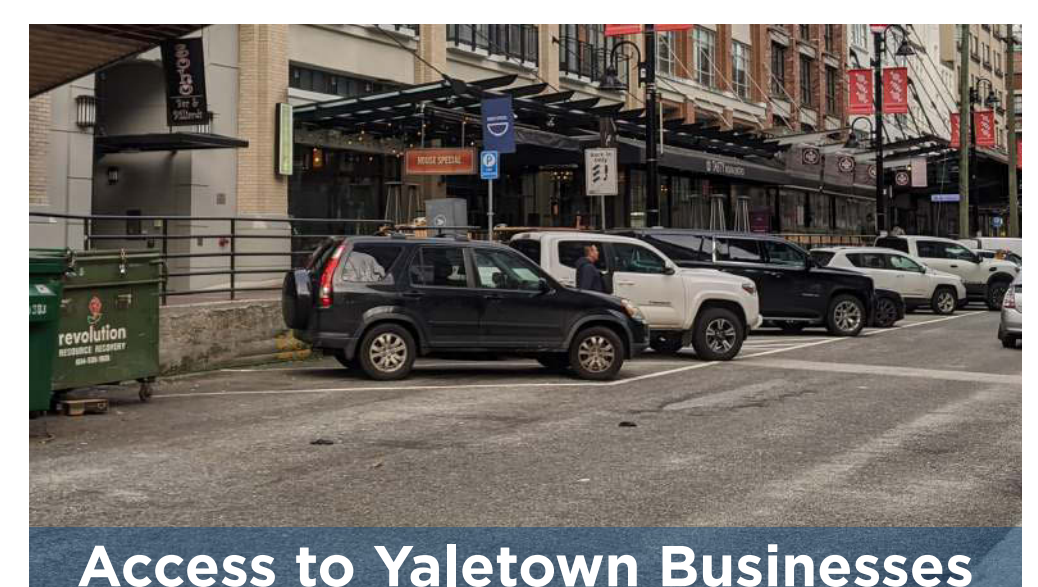
Loading/passenger zones



Retain all turning movements at Drake St & Pacific Blvd



Access to neighbourhood



Access to Yaletown Businesses



Cycling safety



Walking infrastructure & landscape



Protected Intersection & improved connections

Although some participants shared that maintaining two-way motor vehicle traffic along Drake Street was important, many shared concerns that **Option 2 (one-way protected bike lanes on each side of the street and two-way vehicle traffic)** retained very little parking and loading/passenger zones.

Overall, Option 2 provided fewer transportation and public realm improvements since it reduced sidewalk widths at intersections, introduced new motor vehicle turning restrictions, had more conflict areas and didn't provide opportunities for green rainwater infrastructure.

The new recommended design (two-way protected bike lane and one-way eastbound vehicle traffic) balances the needs of residents and businesses with people walking, cycling and driving along Drake Street.

Please review Boards 8-11 for details on how the Recommended Design was modified. Staff will continue to work with local residents and businesses to address concerns as we refine the final design and share it with Council later this year.

8. NEW RECOMMENDED DESIGN

Drake Street Upgrades - Phase 2 | Downtown Bike Network

CYCLING SAFETY AND COMFORT

The protected bike lane is extended to Pacific Blvd. A protected bike lane helps minimize conflicts with other road users and provides an AAA (All-Ages-and-Abilities) connection to the rest of the downtown bike network.

Modified based on feedback: People cycling westbound from Pacific Blvd. to Hamilton St. remain in mixed traffic and transition to the protected bike lane at Hamilton St. This portion of the street will be low-volume and will allow comfortable sharing of space between motor vehicles and people cycling.

TRAVEL AND TURNING LANE

To provide space for an east-west cycling connection and a landscaped buffer while maintaining as much parking as possible, the new design converts Drake Street into one-way vehicle traffic eastbound from Hornby St. to Hamilton St.

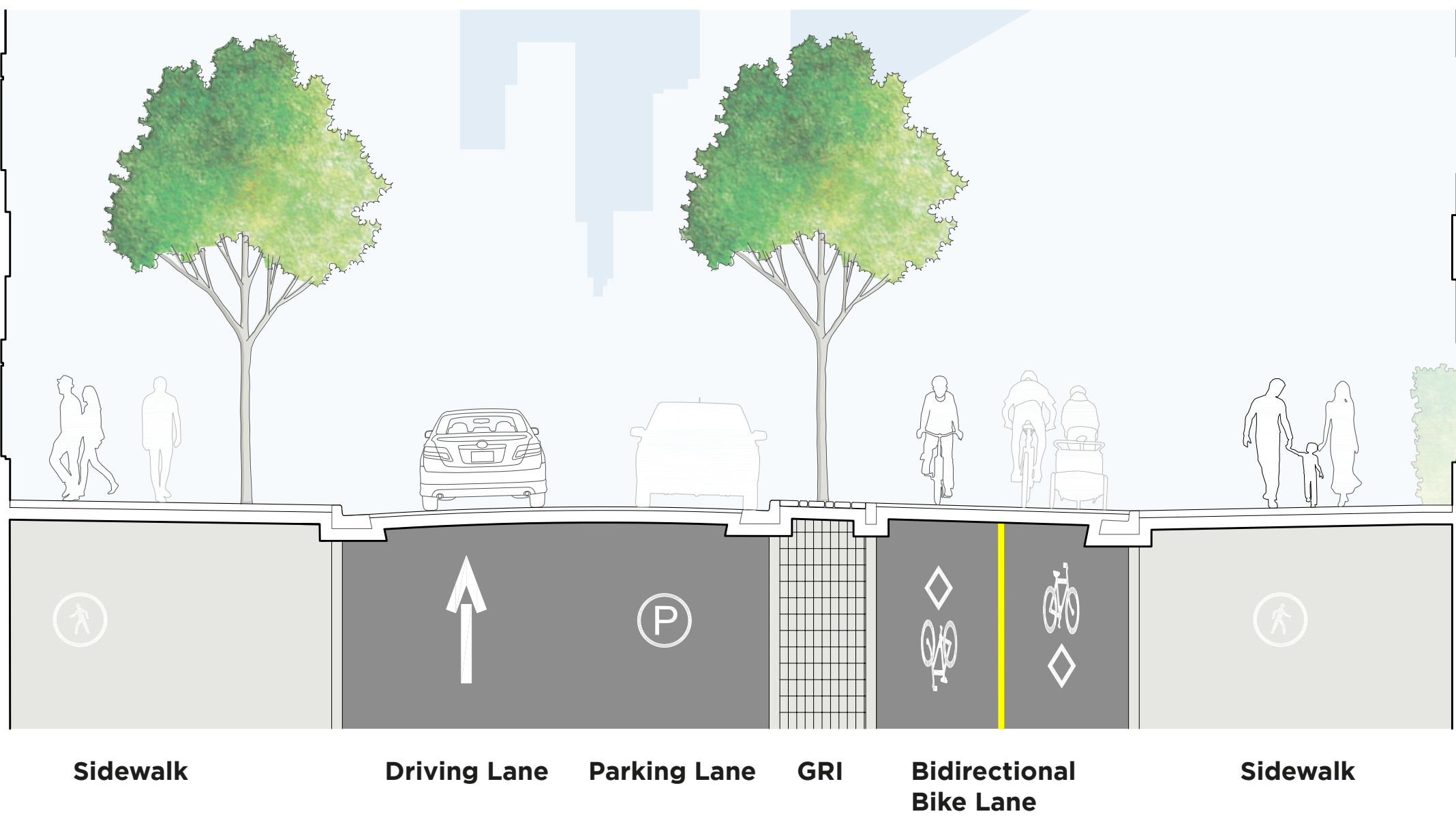
Modified based on feedback: From Hamilton St. to Pacific Blvd., vehicle traffic would remain two-way. Vehicles travelling eastbound on Drake St. can turn left, turn right and go straight at Pacific Blvd. This allows better access to the Marinaside neighbourhood, Elsie Roy School, and provides improved vehicular connections from many locations, including the Granville Bridge.

PARKING & LOADING/PASSENGER ZONE

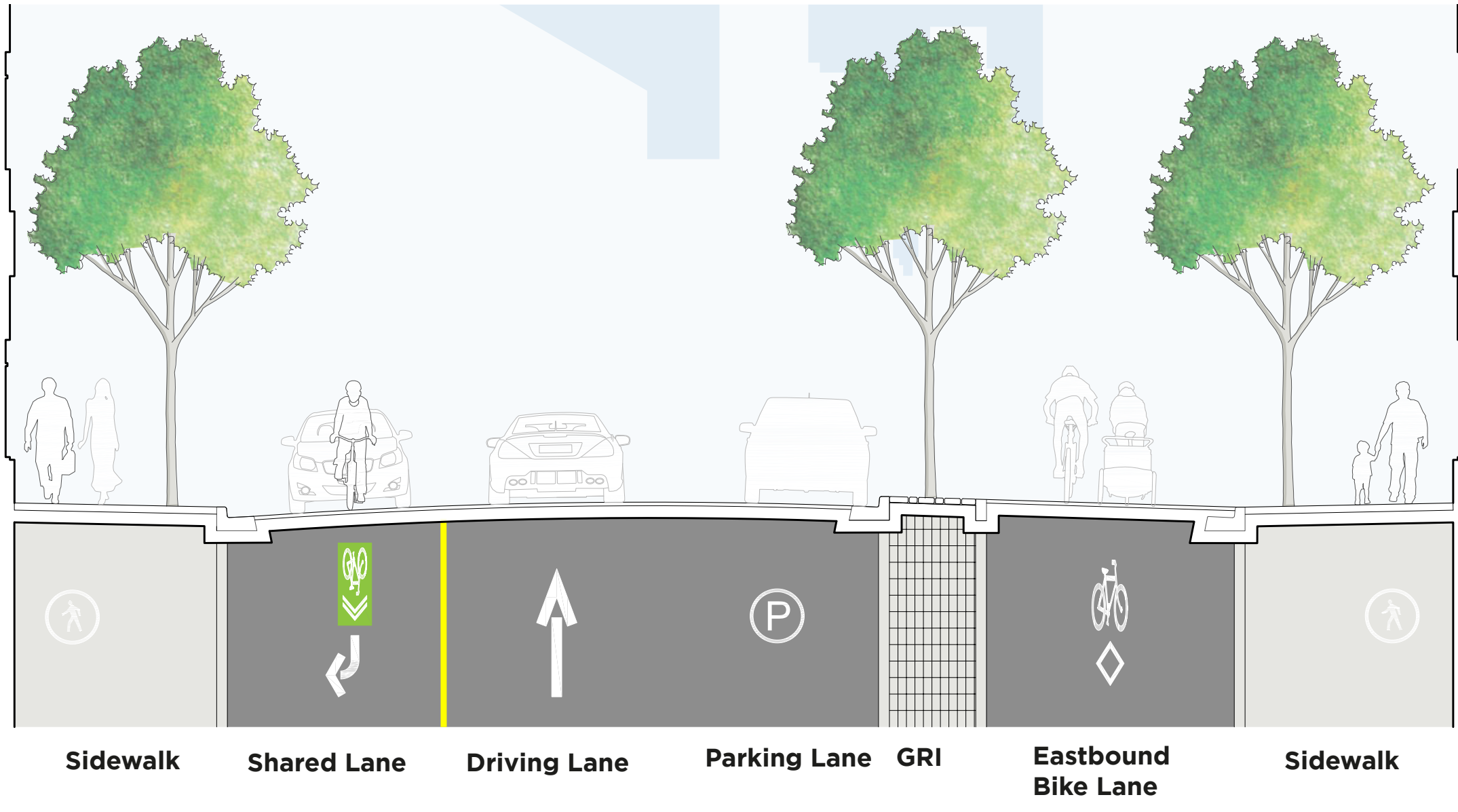
As much as possible, parking has been maintained on the south side of the street while providing right turn lanes at intersections and ensuring adequate sightlines at driveways. In total there will be a net decrease of approximately 40 parking spaces along Drake Street. Staff have also reviewed the availability of public on-street and off-street parking within a block of Drake Street (between Burrard St. and Pacific Blvd.), in total there are over 600 parking spaces (approximately 300 on-street and 300 off-street) available to the public in this area.

Modified based on feedback: Passenger and loading zones are prioritized in the new design. The project team has been working directly with businesses and residents to retain and locate these zones, particularly where they are most needed by businesses and residents.

Burrard St. to Hamilton St. (Looking East)



Hamilton St. to Pacific Blvd. (Looking East)



GREEN RAINWATER INFRASTRUCTURE

The proposed design would create a more pleasant sidewalk and cycling experience with a raised two-way bicycle path. The originally proposed treed and landscaped median has been enhanced with integrated green rainwater infrastructure including permeable paving materials, trees and rainwater trenches which will help reduce road flooding during heavy or prolonged rainfall. This is a key component of meeting our Rain City Strategy.

FUTURE CONNECTIONS

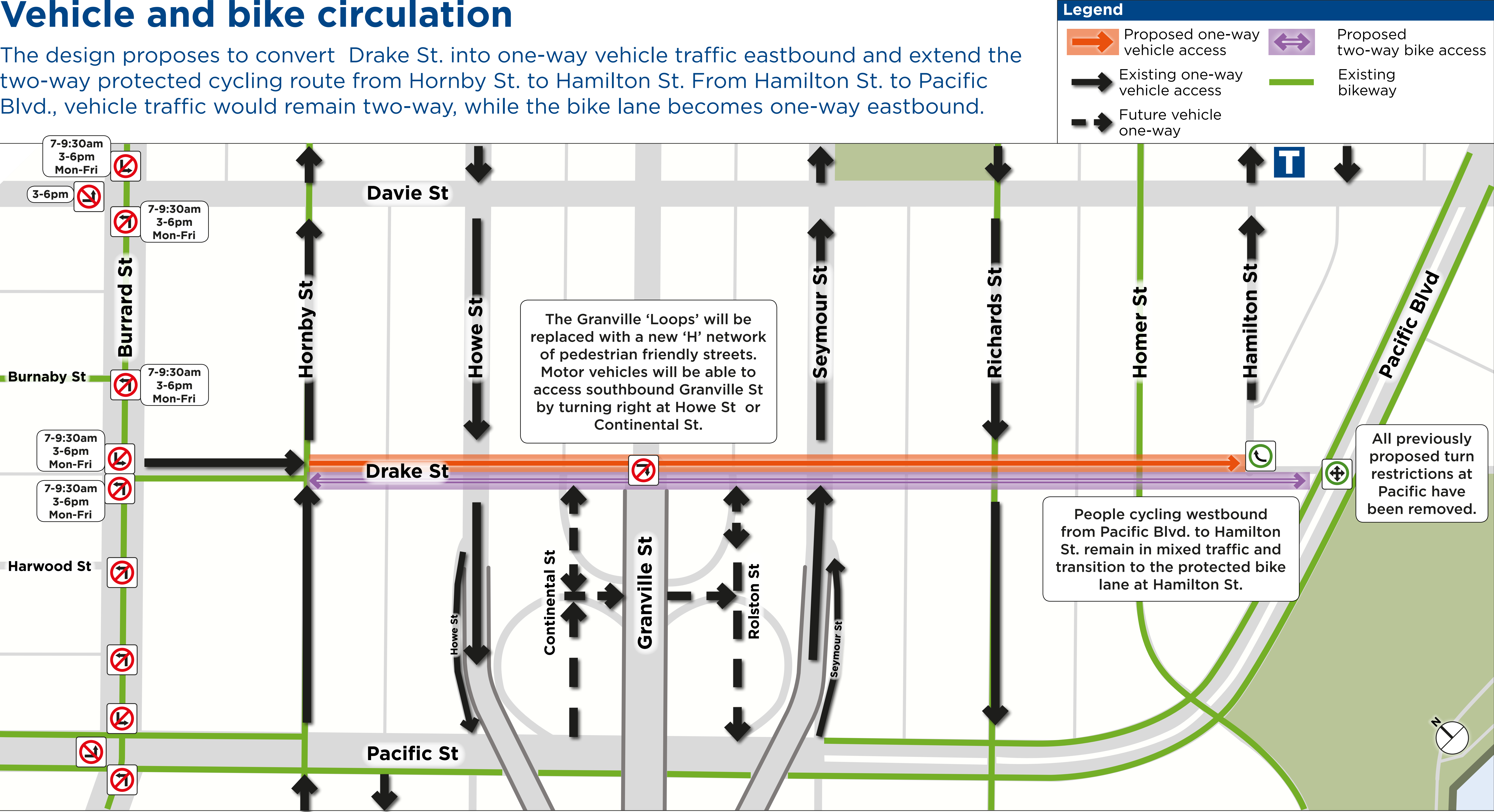
Proposed based on feedback: To help improve the connection to the Seaside Greenway, minor walking and cycling improvements are proposed on Marinaside Cres. between Drake St. and Davie St. Through a related project, the City will explore re-designing the Davie St. & Marinaside Cres. intersection and separating walking and cycling paths to help reduce conflicts between all users and provide a smooth transition between the roadway and Seaside Greenway.

9. PROPOSED DESIGN CONCEPT

Drake Street Upgrades - Phase 2 | Downtown Bike Network

Vehicle and bike circulation

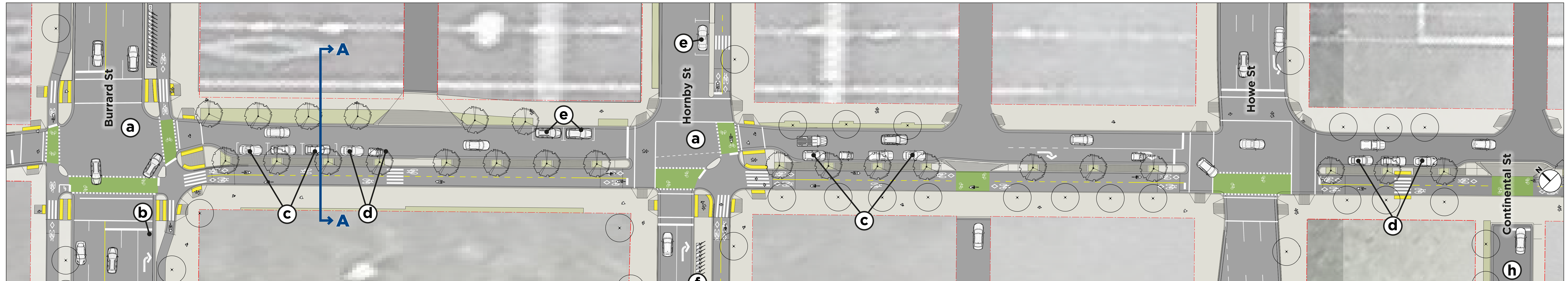
The design proposes to convert Drake St. into one-way vehicle traffic eastbound and extend the two-way protected cycling route from Hornby St. to Hamilton St. From Hamilton St. to Pacific Blvd., vehicle traffic would remain two-way, while the bike lane becomes one-way eastbound.



10. DETAILED DESIGN - BURRARD TO CONTINENTAL

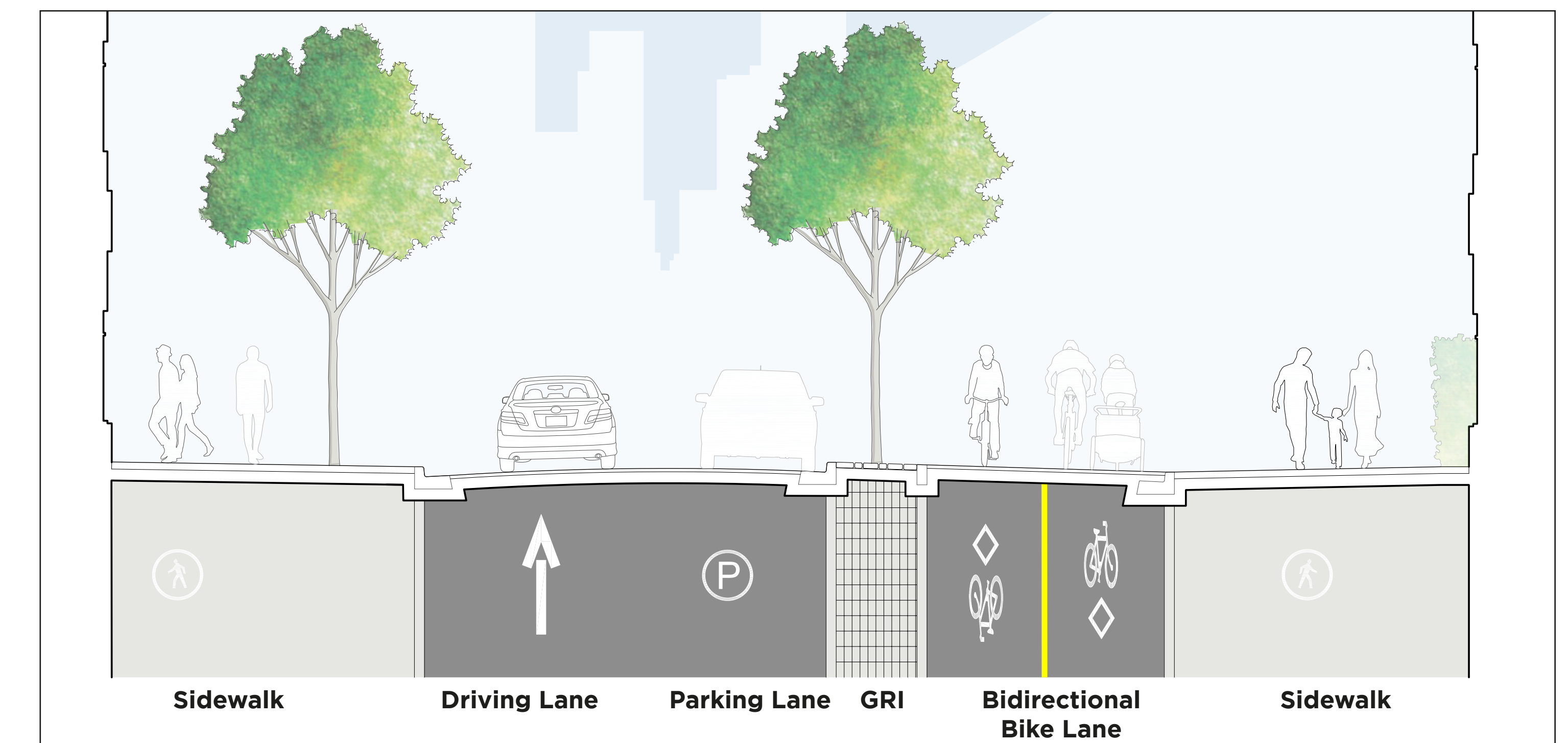
Drake Street Upgrades - Phase 2 | Downtown Bike Network

One-way vehicle traffic eastbound & bidirectional (two-way) bike lane on south side of street



- (a) Protected intersection**
- (b) Right turn lane for vehicles**
(Remove three part time metered parking stalls on Burrard St.)
- (c) Metered parking**
- (d) Passenger zone**
- (e) New Passenger zone**
(Remove No stopping zone)
- (f) Relocate Public Bike Share**
(Transition to a right turn lane)
- (g) Existing parking and loading zones moved south on Hornby St.**
- (h) Potential short-term parking**
(Passenger or loading zone)

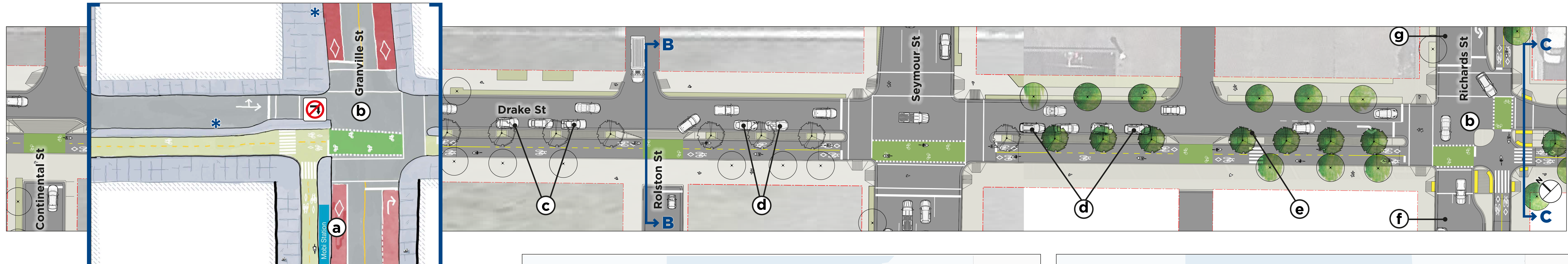
Section A-A: One-way vehicle traffic, parking, two-way cycling lane



11. DETAILED DESIGN - CONTINENTAL TO RICHARDS

Drake Street Upgrades - Phase 2 | Downtown Bike Network

One-way vehicle traffic eastbound & bidirectional (two-way) bike lane on south side of street

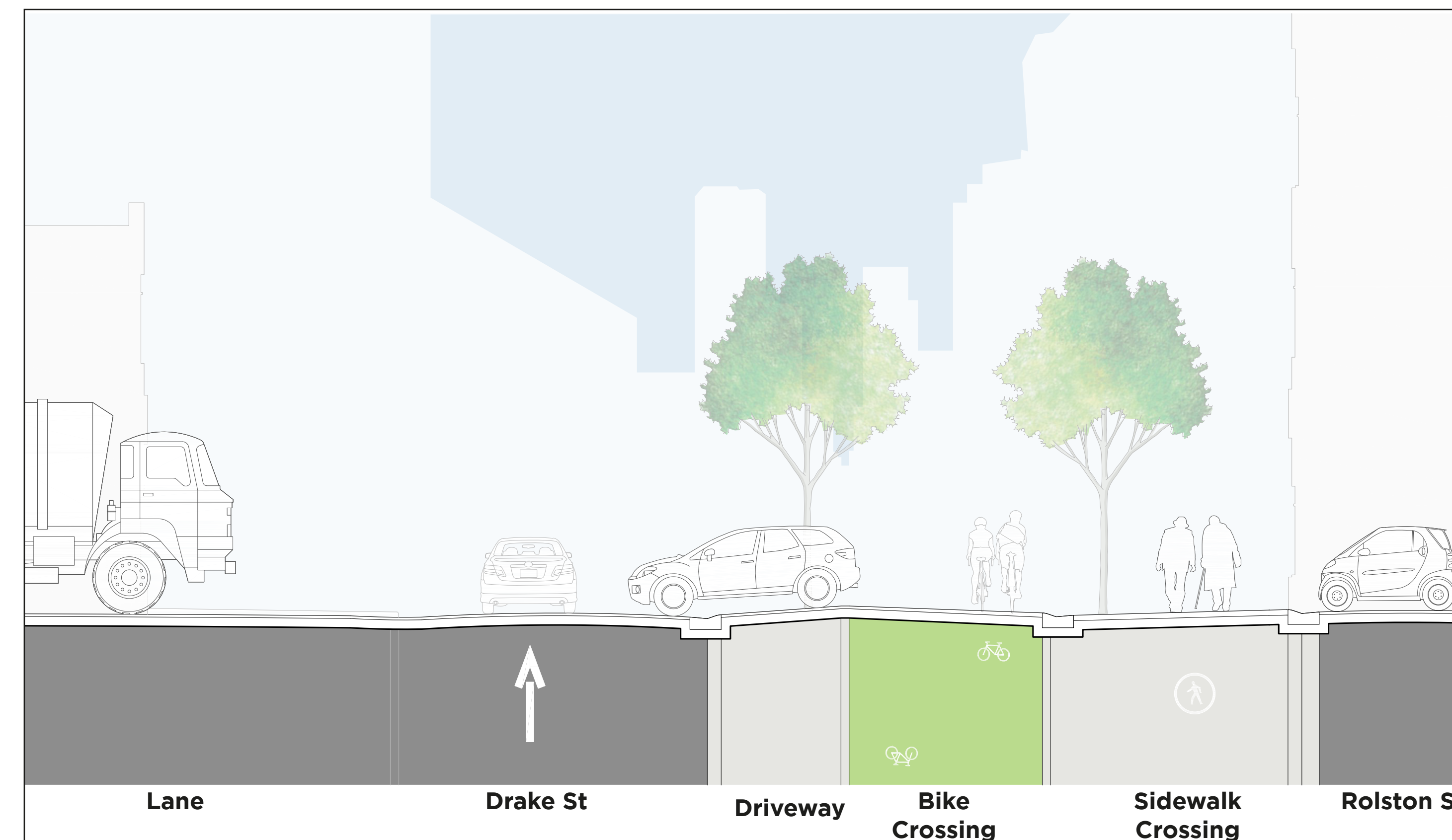


Future protected intersection at Granville St. & Drake St.

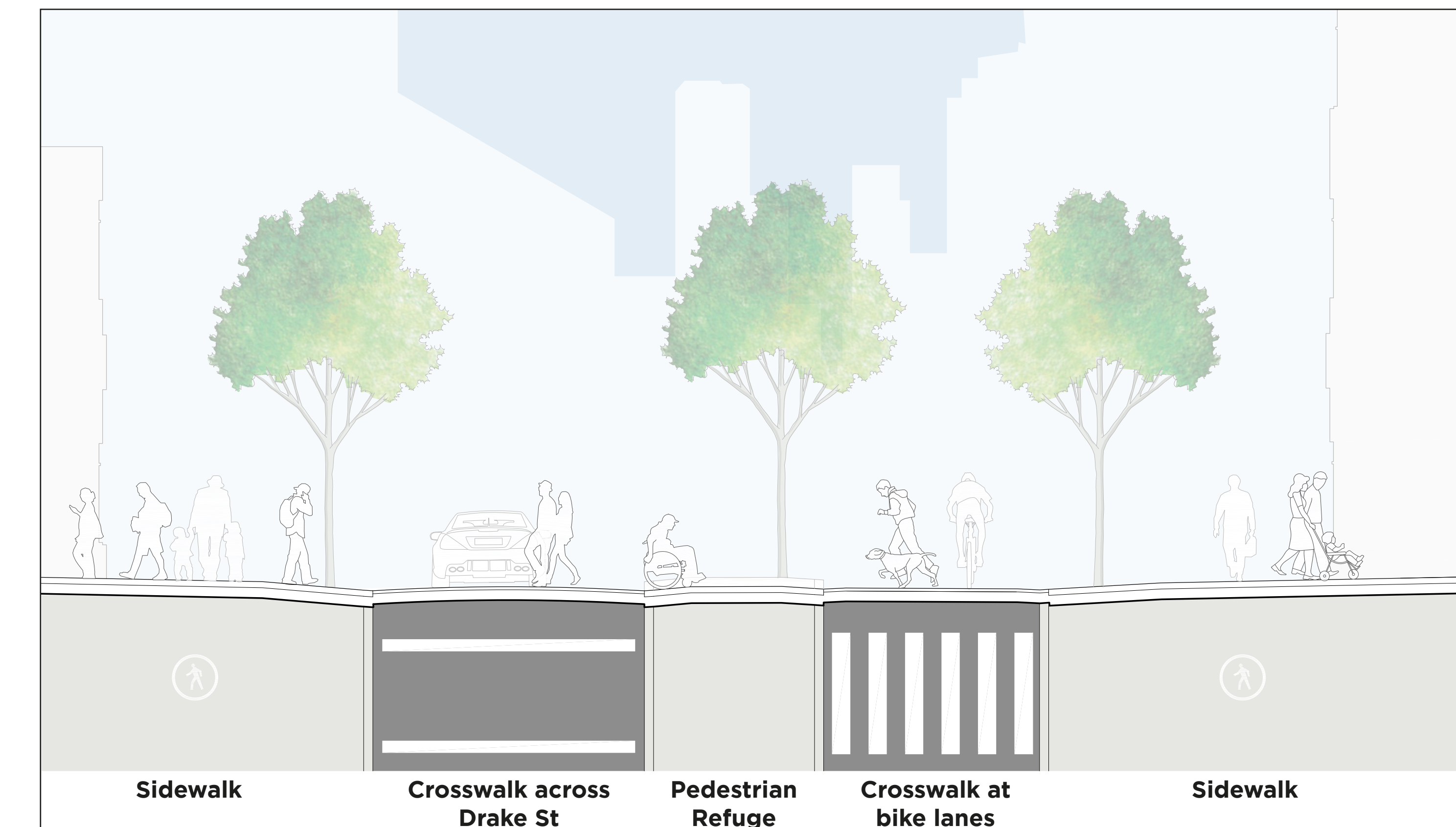
The design of this intersection may change as part of the design process of the Granville Bridge Connector. As a protected intersection, it will be designed to be comfortable and safe for people to walking, roll and cycle. To learn more about the project please visit: vancouver.ca/granvilleconnector

* Loading and parking details to be confirmed

- (a) New Public bike share**
- (b) Protected intersection**
- (c) Loading zone**
- (d) Metered Parking**
- (e) Passenger zone (6pm - 2am)**
- (f) New Passenger zone (Remove No Stopping Zone)**
- (g) New Metered parking (Remove No Stopping Zone)**



Section B-B: Looking east on Drake St. at Rolston St.

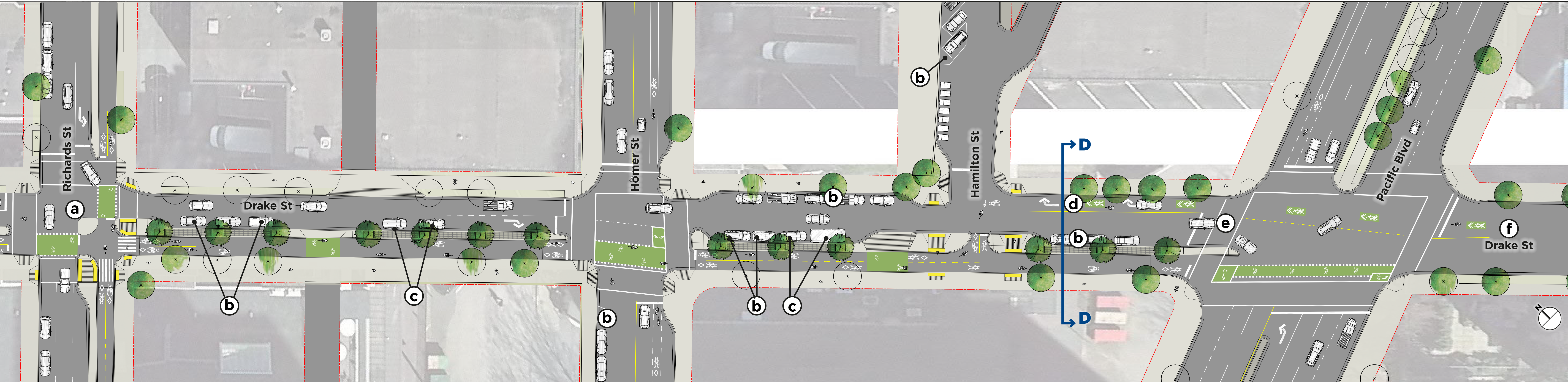


Section C-C: Looking east through protected intersection at Drake St. and Richards St.

12. DETAILED DESIGN - RICHARDS TO PACIFIC

Drake Street Upgrades - Phase 2 | Downtown Bike Network

One-way vehicle traffic eastbound & bidirectional (two-way) bike lane on south side of street

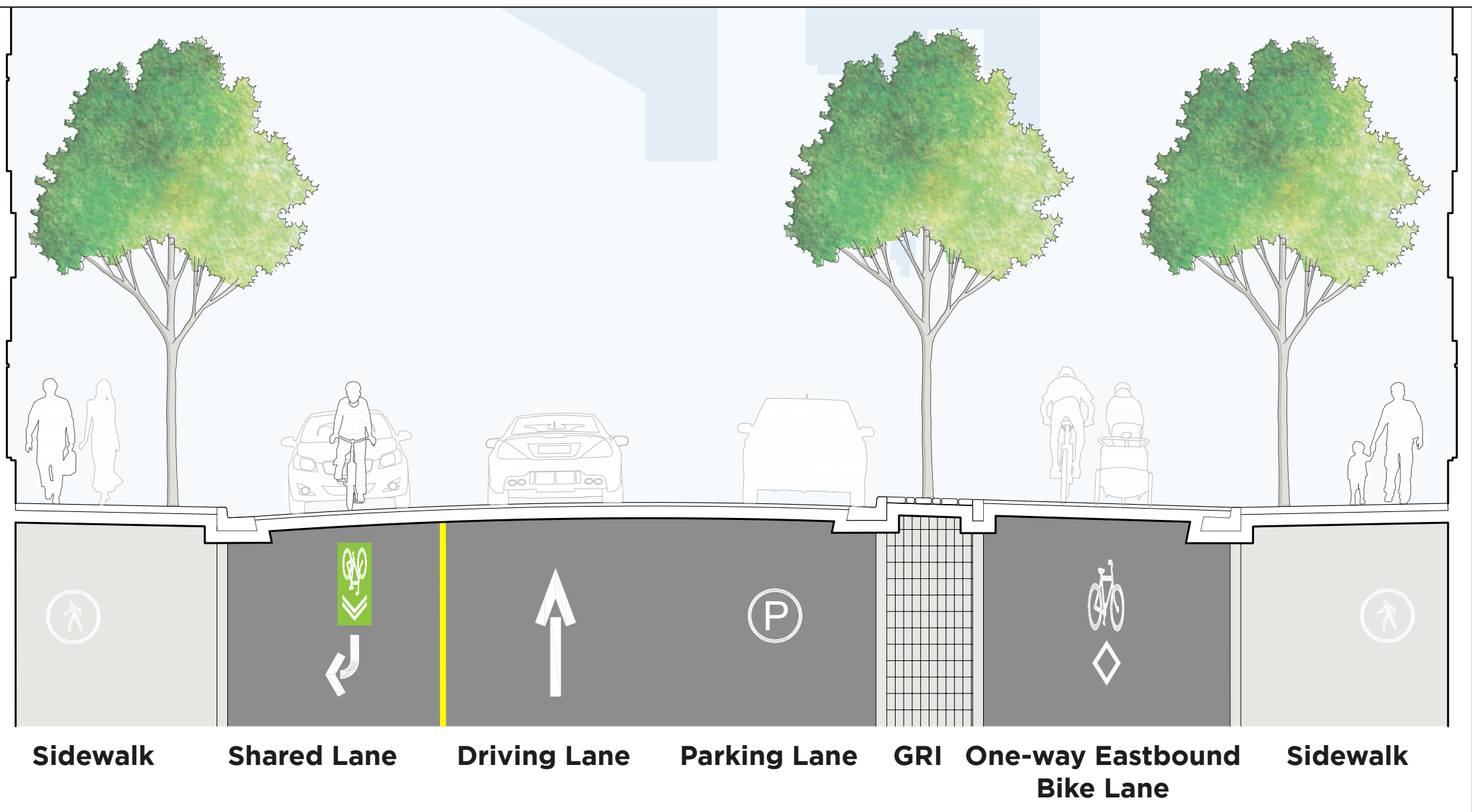


VEHICLE AND BICYCLE MOVEMENTS AT DRAKE ST. AND PACIFIC BLVD.

- (a) Protected intersection**
- (b) Metered parking**
- (c) Passenger zone**

(d) Westbound shared use lane	Vehicles and bikes can travel westbound on Drake St. between Pacific Blvd. and Hamilton St. <ul style="list-style-type: none">• Vehicles must turn right onto Hamilton St.• Bikes must transition to protected bike lane
(e) Eastbound vehicles on Drake St.	Movements allowed for eastbound vehicles on Drake St. at Pacific Blvd. include: <ul style="list-style-type: none">• Left turn onto Pacific Blvd.• Straight to continue along Drake St.; and• Right turn onto Pacific Blvd.
(f) Drake St. east of Pacific Blvd.	Drake St. east of Pacific Blvd. would function the same way it does currently, where vehicles and bicycles share the road. The speed limit would be 30km/hr with wayfinding to Seaside via Drake and Marinaside to Davie (or similar)

Section D-D:
Looking east
on Drake St. at
Hamilton St.



13. NEXT STEPS

Drake Street Upgrades - Phase 2 | Downtown Bike Network

What's happening next?

Early 2020

City staff will take into consideration the feedback received from local businesses, stakeholders, residents and the public to develop a more detailed recommended design.

Spring-2020

Staff will present the final designs and summary of feedback to the City Council.

2020-2021

The Drake Street Upgrades between Burrard St. and Hornby St. (existing section) are expected to be delivered through adjacent re-development in summer 2020. Pending Council approval, the extension would be built in 2021.

Tell us what you think!



Fill out a survey at today's open house, and drop it off at the sign-in table or mail it back to us.



Complete an online survey at vancouver.ca/drake-street-upgrades



Call **3-1-1 (T-T-Y 7-1-1)**



Email us at drakestreetupgrades@vancouver.ca

Please submit feedback by February 17, 2020

Join our mailing list

If you'd like to stay updated on all the developments happening on the Drake Street project, please sign up for our email list online at vancouver.ca/drake-street-upgrades.

