All Ages and Abilities Facilities

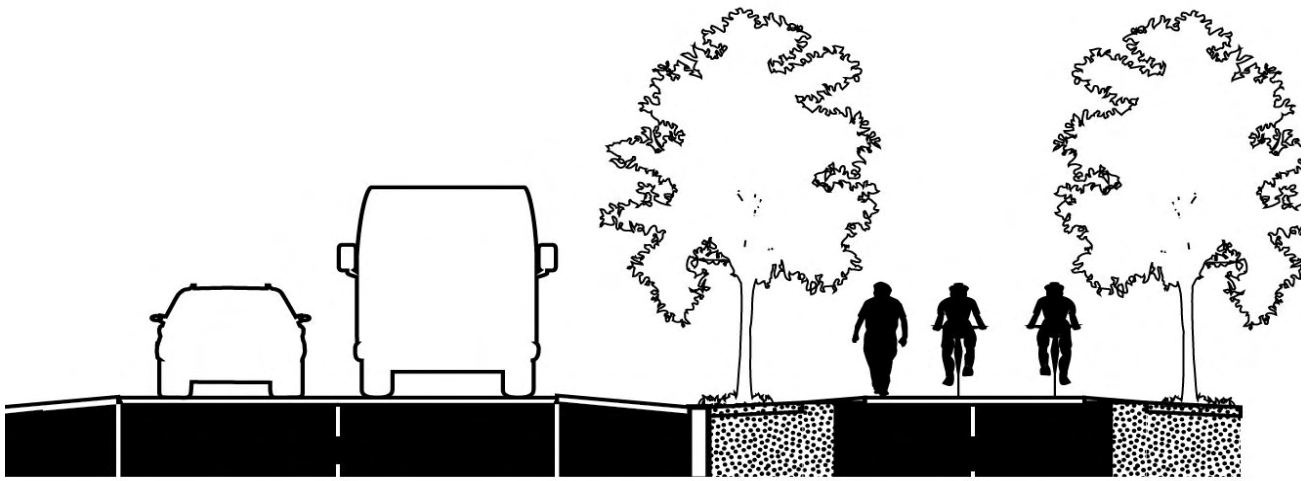
Multi-Use Paths

Objective: build understanding and consensus amongst LC's on the factors that influence comfort and safety of MUP's and empower you to use that information to advocate for improved infrastructure design

Multi-Use Paths

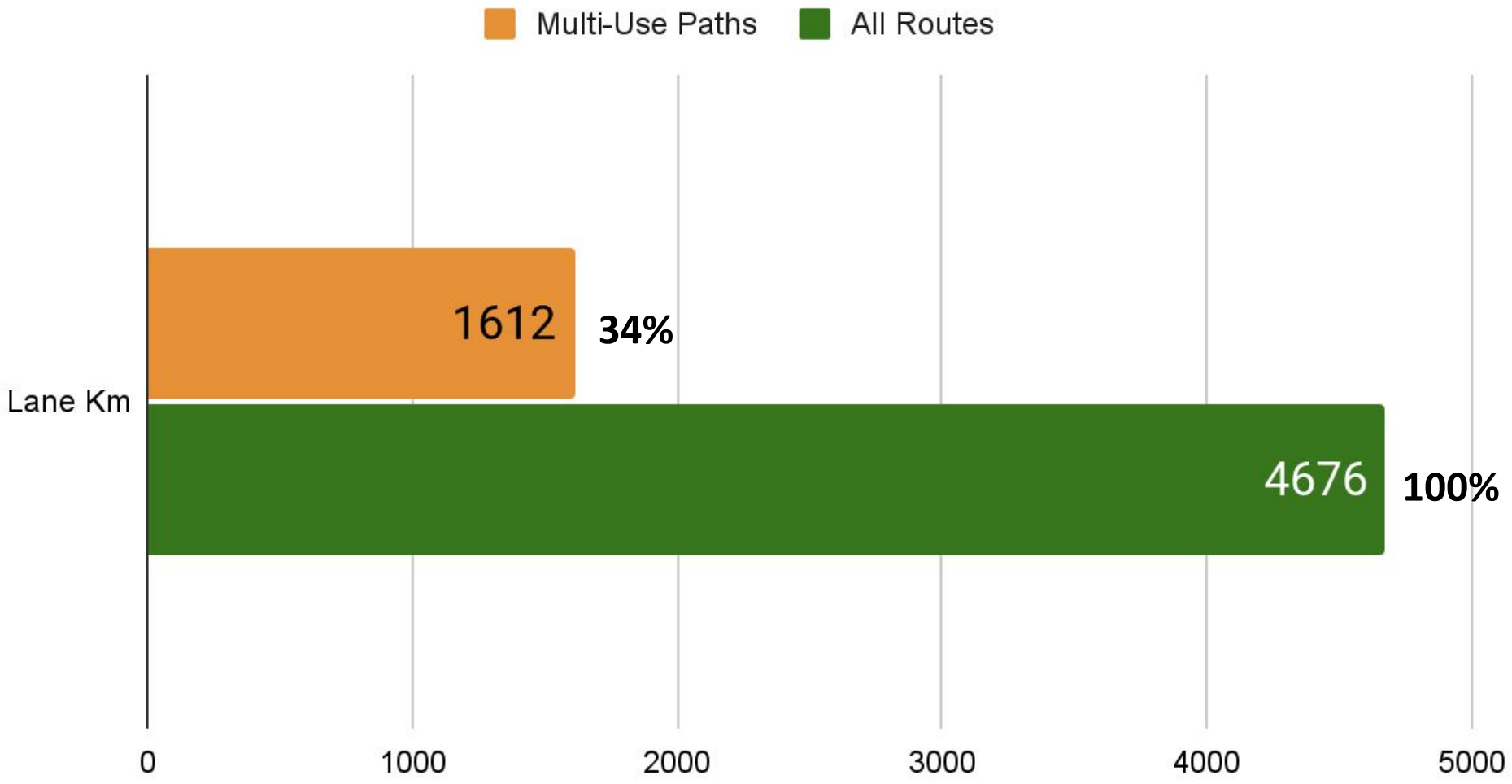
Off road facilities that allow for shared use by people walking and cycling. Also accommodate mobility and micromobility devices that are compatible with pedestrians and cyclists.

Multi-Use Paths

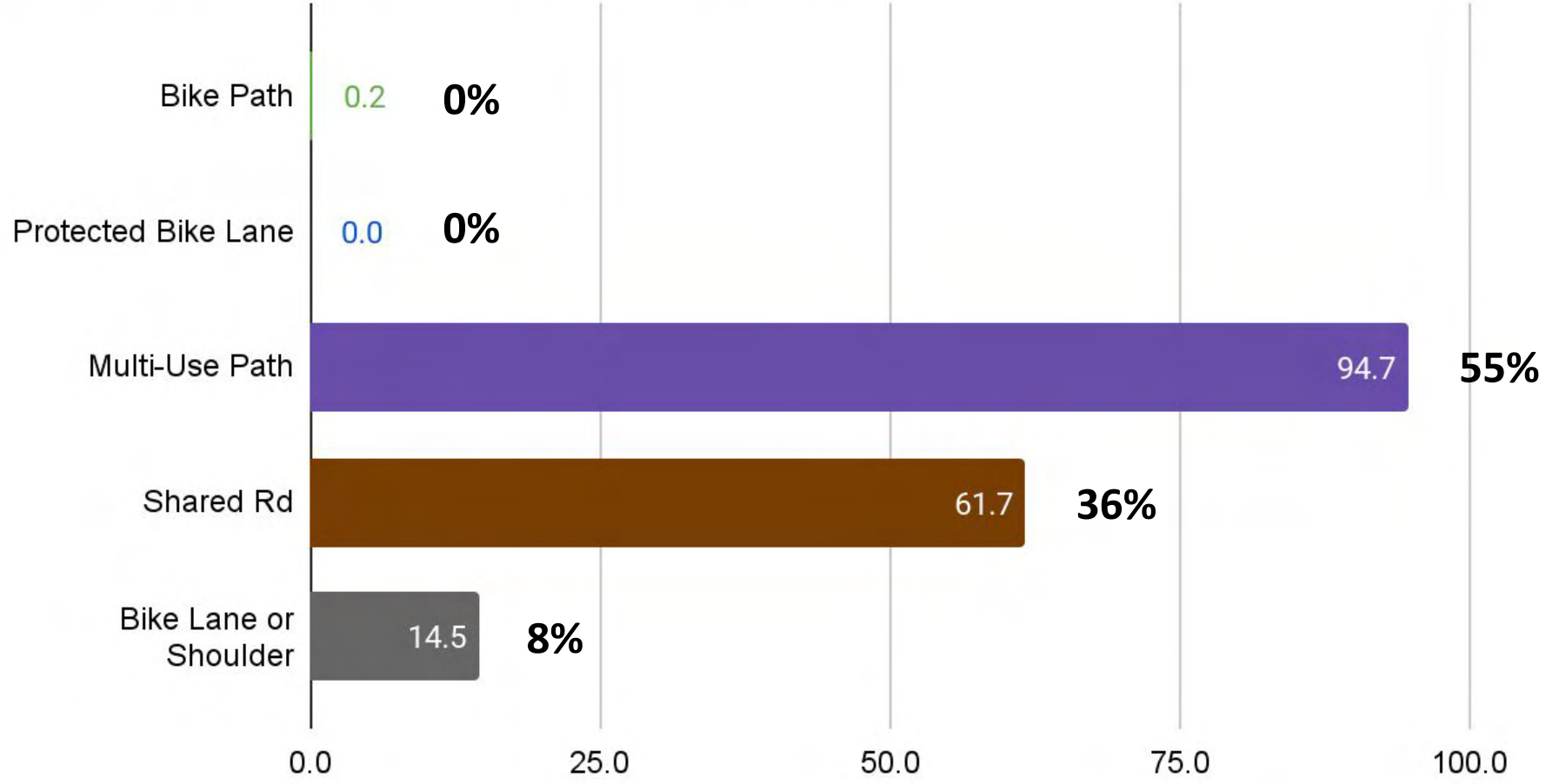


- Bidirectional 2.7 - 6.0 m
- Unidirectional 2.1 - 4.0 m
- Not intended to replace sidewalks
- Should ideally fall outside road ROW

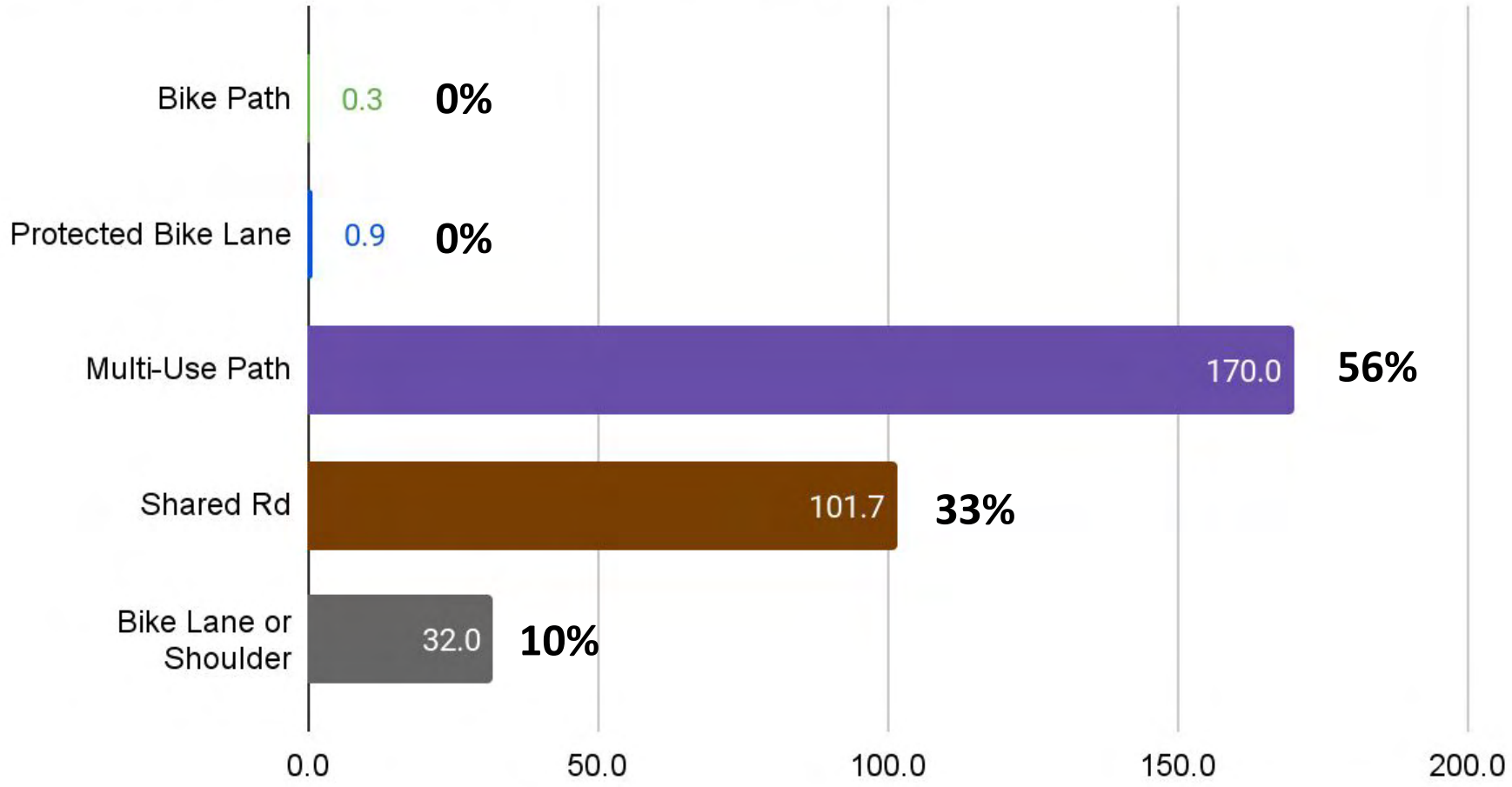
TOTAL EXTENT OF MUPs RELATIVE TO ENTIRE NETWORK (2021)



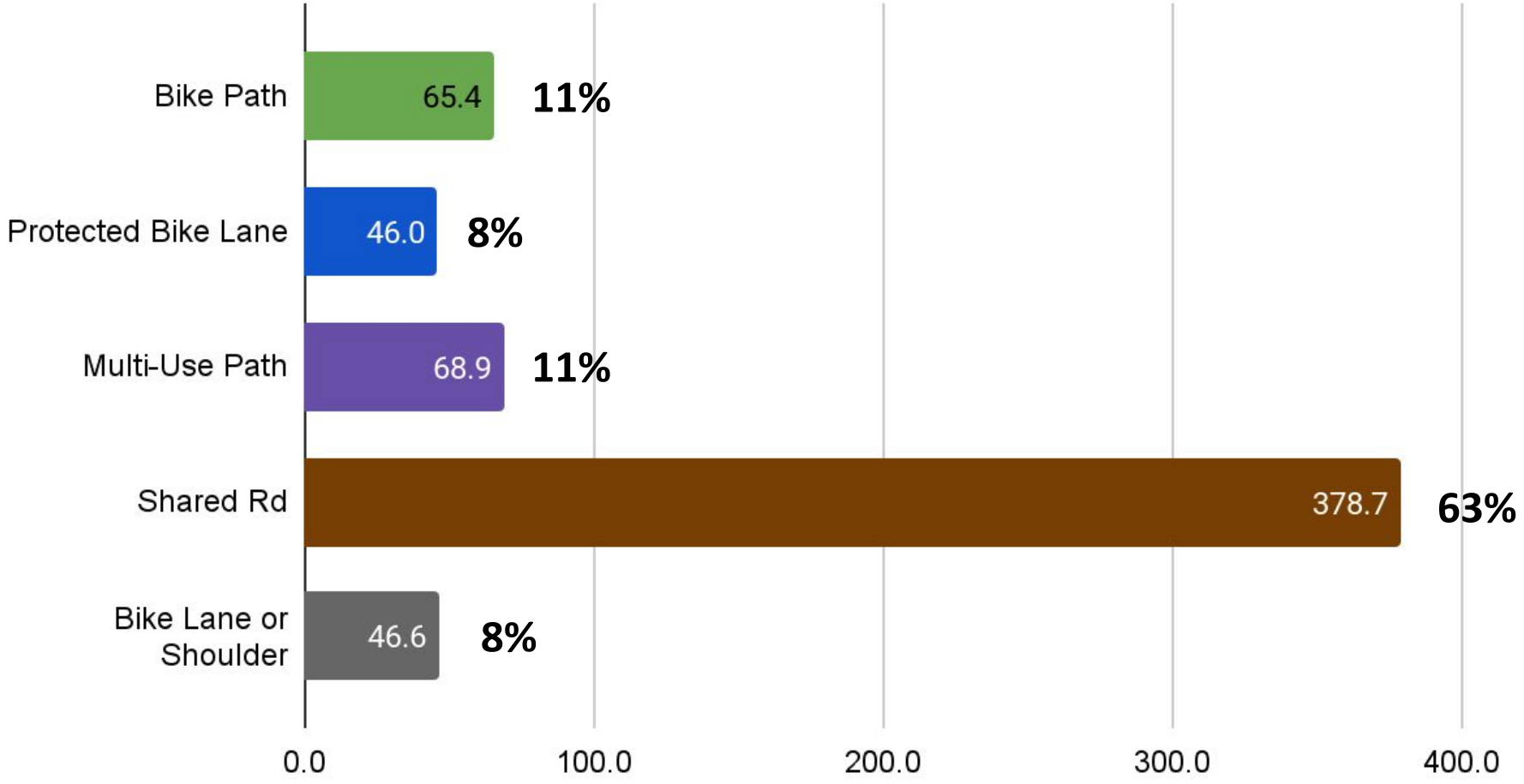
Coquitlam, Lane km by Facility Type

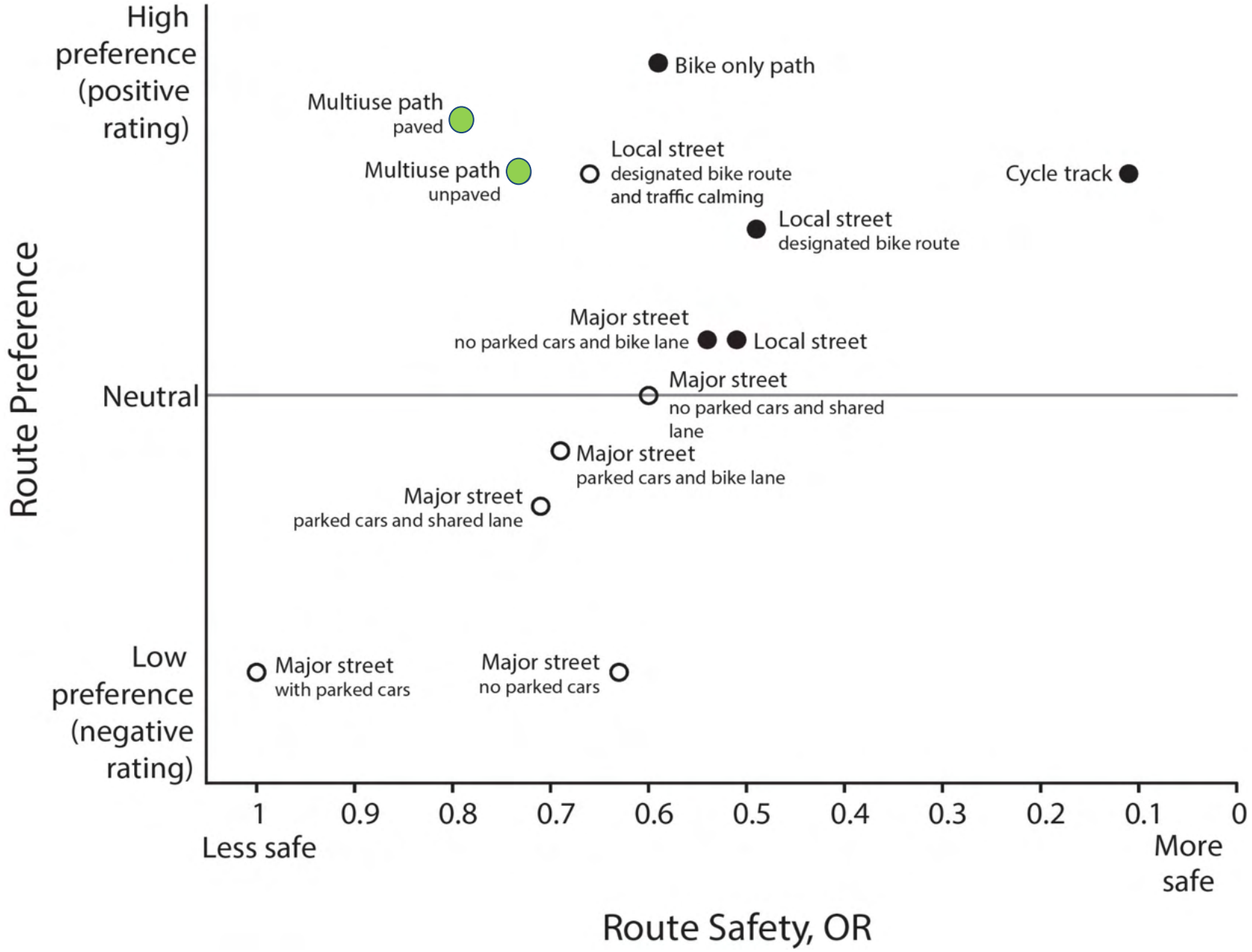


Burnaby, Lane km by Facility Type



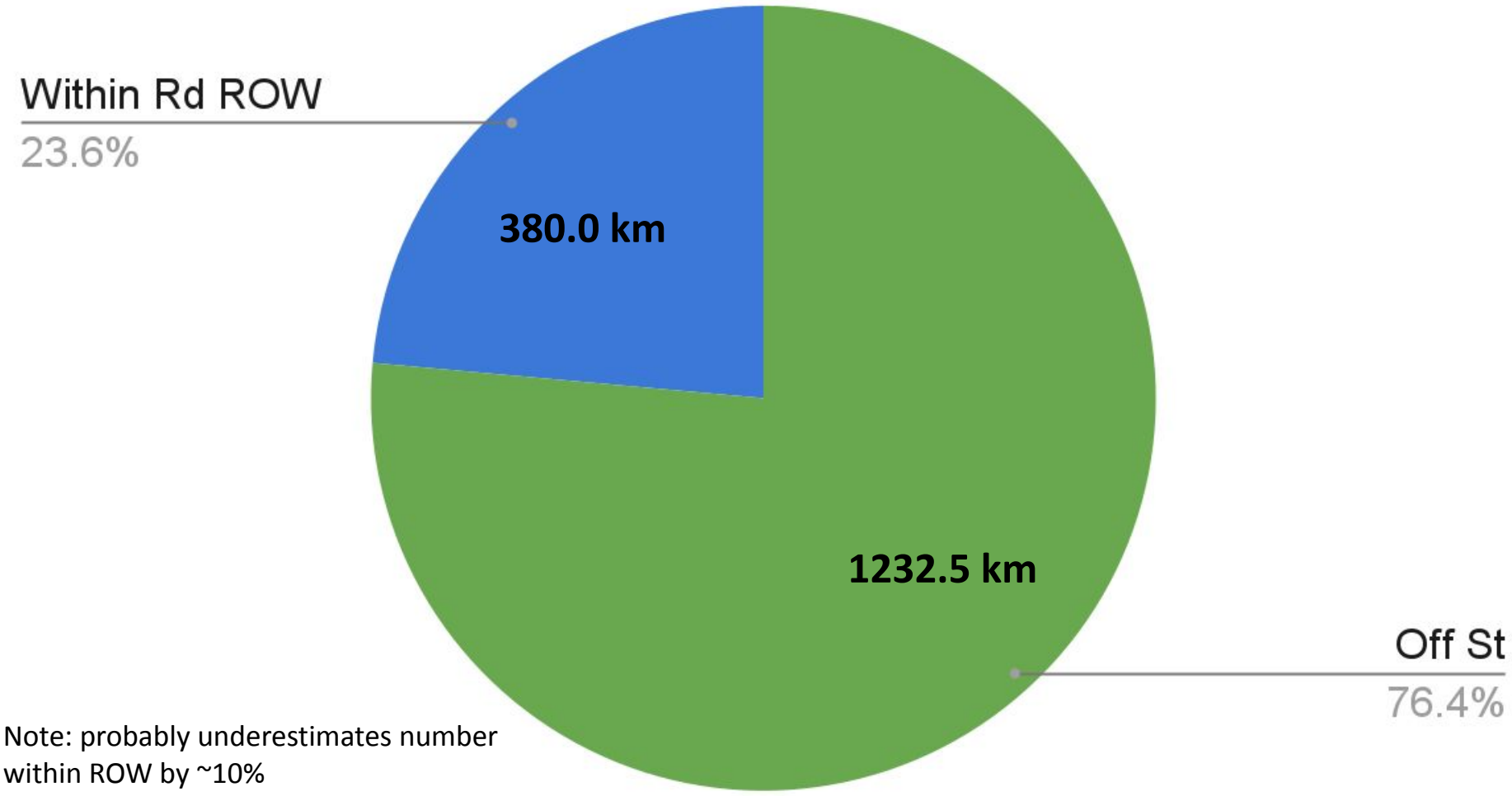
Vancouver, Lane km by Facility Type





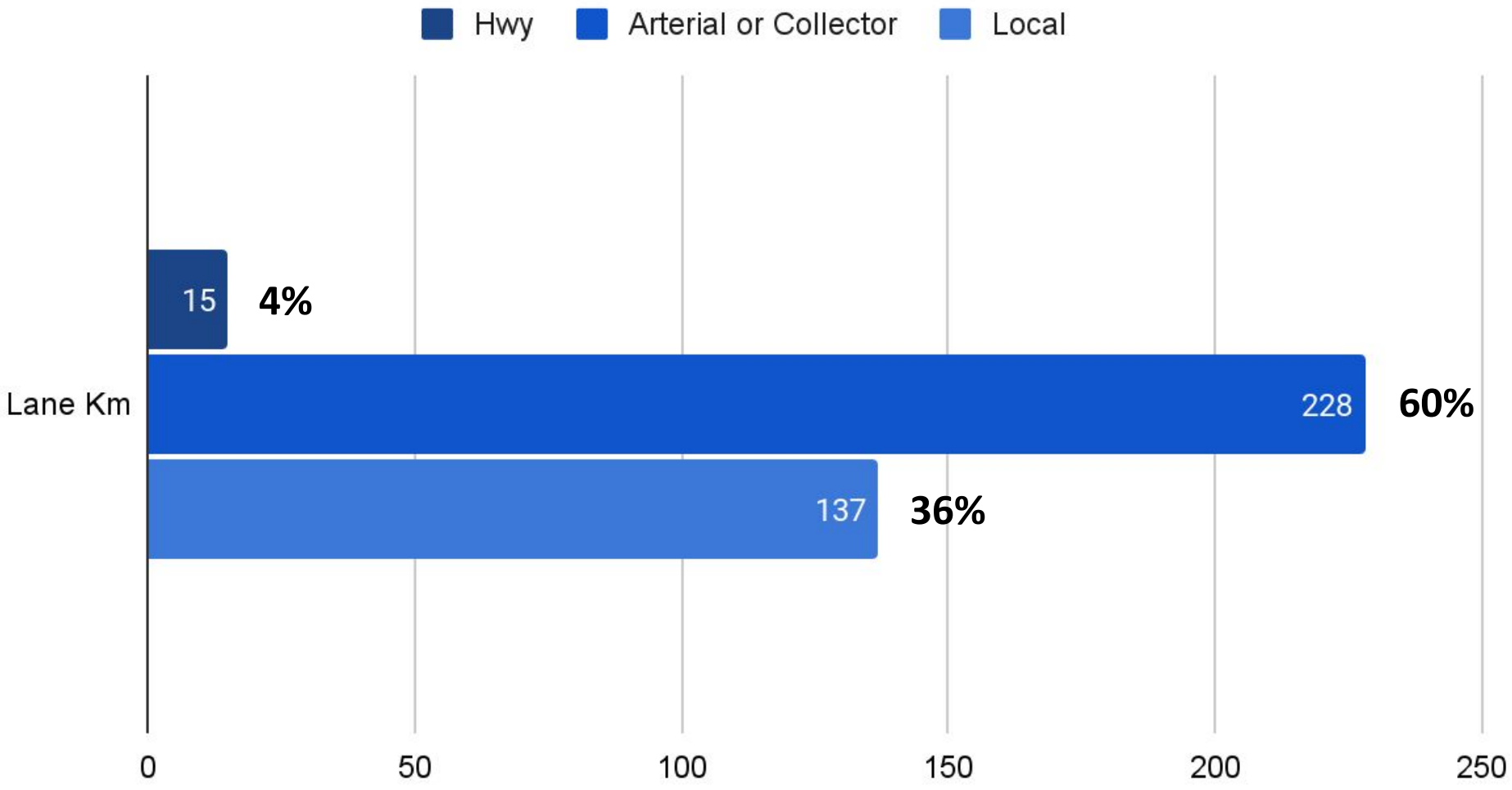
Source: Teschke et. al (2012). Route Infrastructure and the Risk of Injuries to Bicyclists: A Case-Crossover Study

Multi-Use Path Location



Note: probably underestimates number within ROW by ~10%

Multi-Use Paths and Road Type

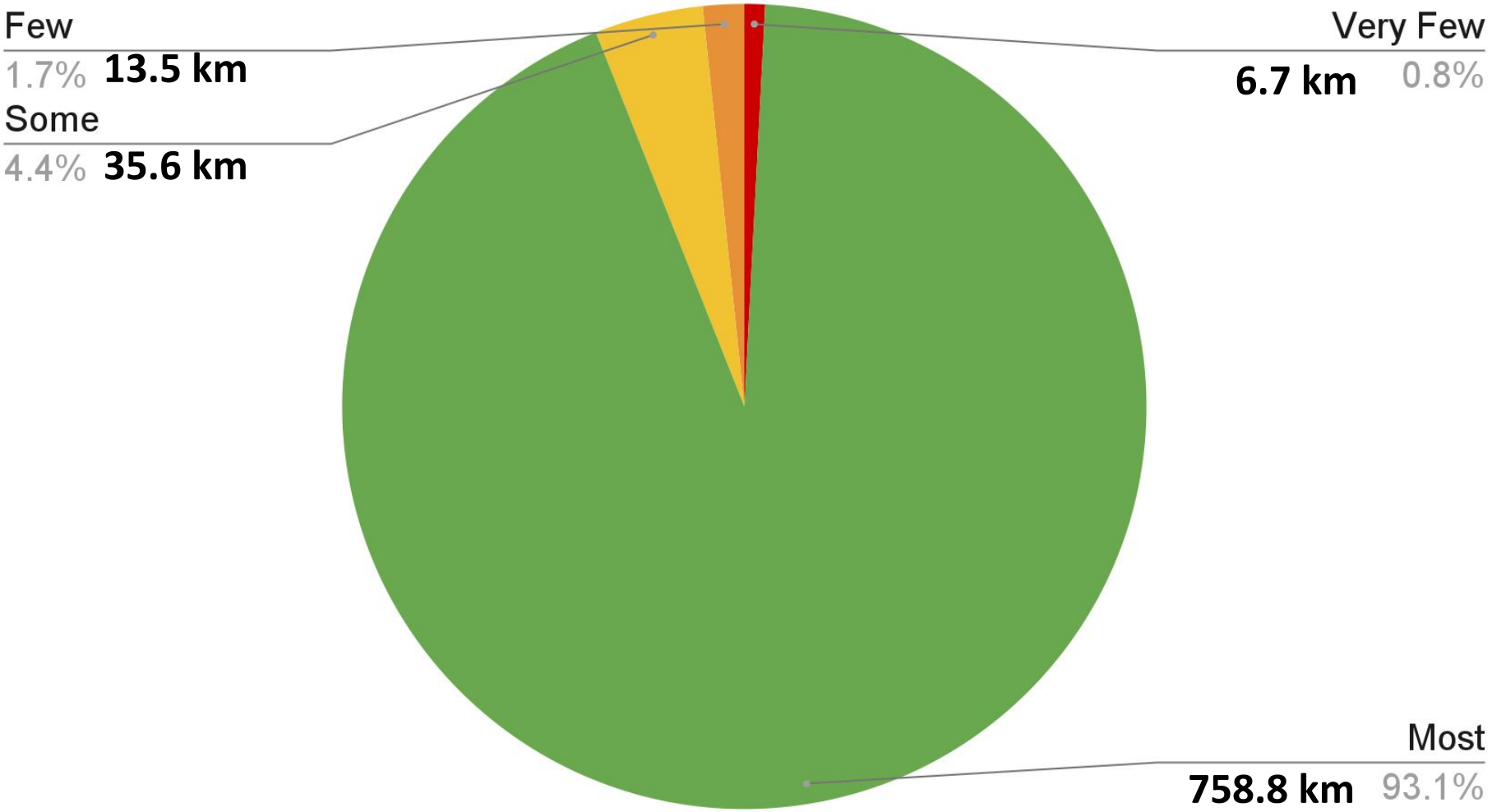


MUP Comfort Ratings

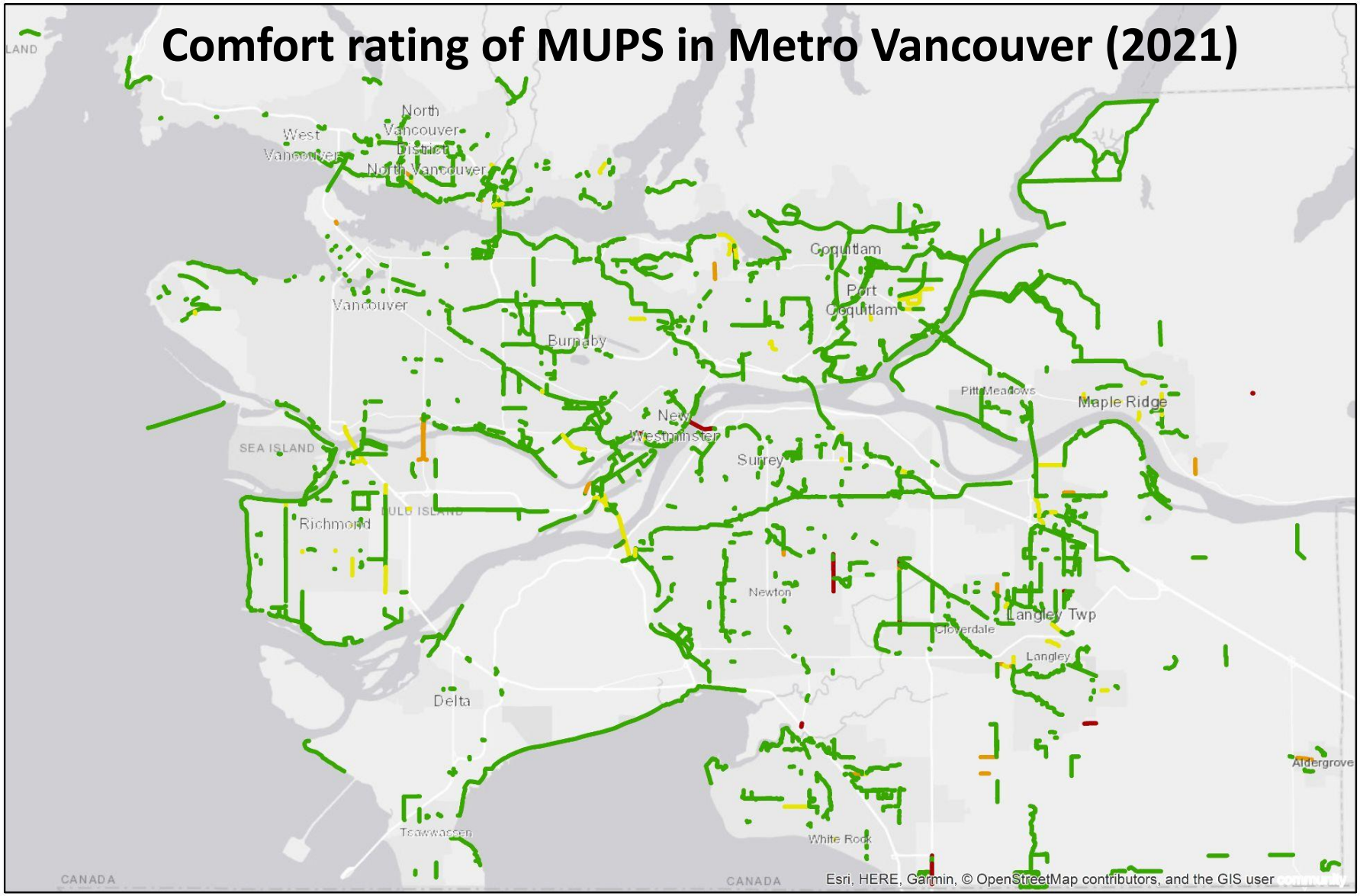
Comfort for:	
Most	
Some	
Few	
Very Few	

Class	Classification Criteria
A	Bidirectional Width: 3.5-6.0 m Unidirectional: 3.0-4.0 m Posted Speed: N/A (outside of road ROW) Volume: N/A Paved
B	Bidirectional Width: 3.0-3.4 m Unidirectional: 2.4-2.9 m Posted Speed: <60 km/h & >1.2 m from curb face Volume: <200 users/peak hour Paved
C	Bidirectional Width: 2.7-2.9 m Unidirectional: 2.1-2.3 m Posted Speed: ≤60 km/h & >1.2 m from curb face Volume: <200 users/peak hour Paved or Unpaved
D	Bidirectional Width: <2.7 m Unidirectional: <2.1 m Speed: >60 km/h & w/ adequate setback or protection Volume: <200 users/peak hour Paved or Unpaved
E	Width: N/A Posted Speed: >60 km/h & <1.2 from curb face Volume: N/A Paved or Unpaved

Comfort rating of MUPS in Metro Vancouver (2021)



Comfort rating of MUPS in Metro Vancouver (2021)



COMFORTABLE FOR

MOST SOME FEW VERY FEW

1:250,000

0 2.5 5 10 15 20 km

N W E S

Comfortable for Most

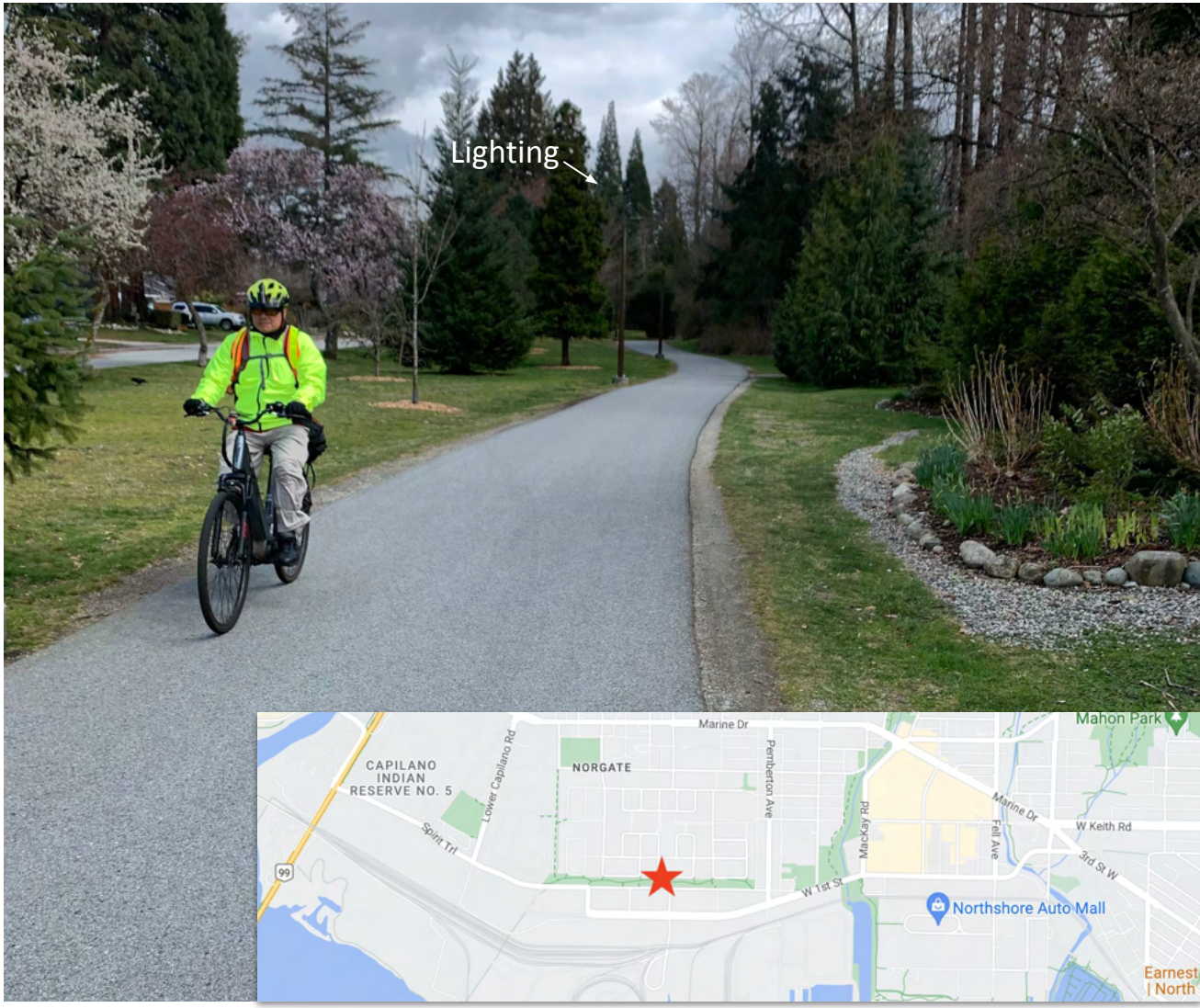
Bi-directional 2.7m min
Uni-directional 2.1m min

Outside of Road ROW **or**
≥ 1.2 buffer from road &
≤ 60 kmh posted speed

Paved or unpaved

Good sightlines
No obstacles in path

Adequate lighting, signage & pavement markings



Spirit Trail in Welch Strip, North Van. Credit: Derrick Daniels

Comfortable for Some

Bi-directional <2.7m

> 60 kmh posted speed

1.2 m buffer from roadway (bike lane helps too)

Paved

Good sightlines
Few obstacles in path

Adequate lighting, signage & pavement markings

Lougheed in Coquitlam 70 km/h posted speed.

Comfortable for Very Few

Bi-directional <2.7m min

Buffer < 1.2 m

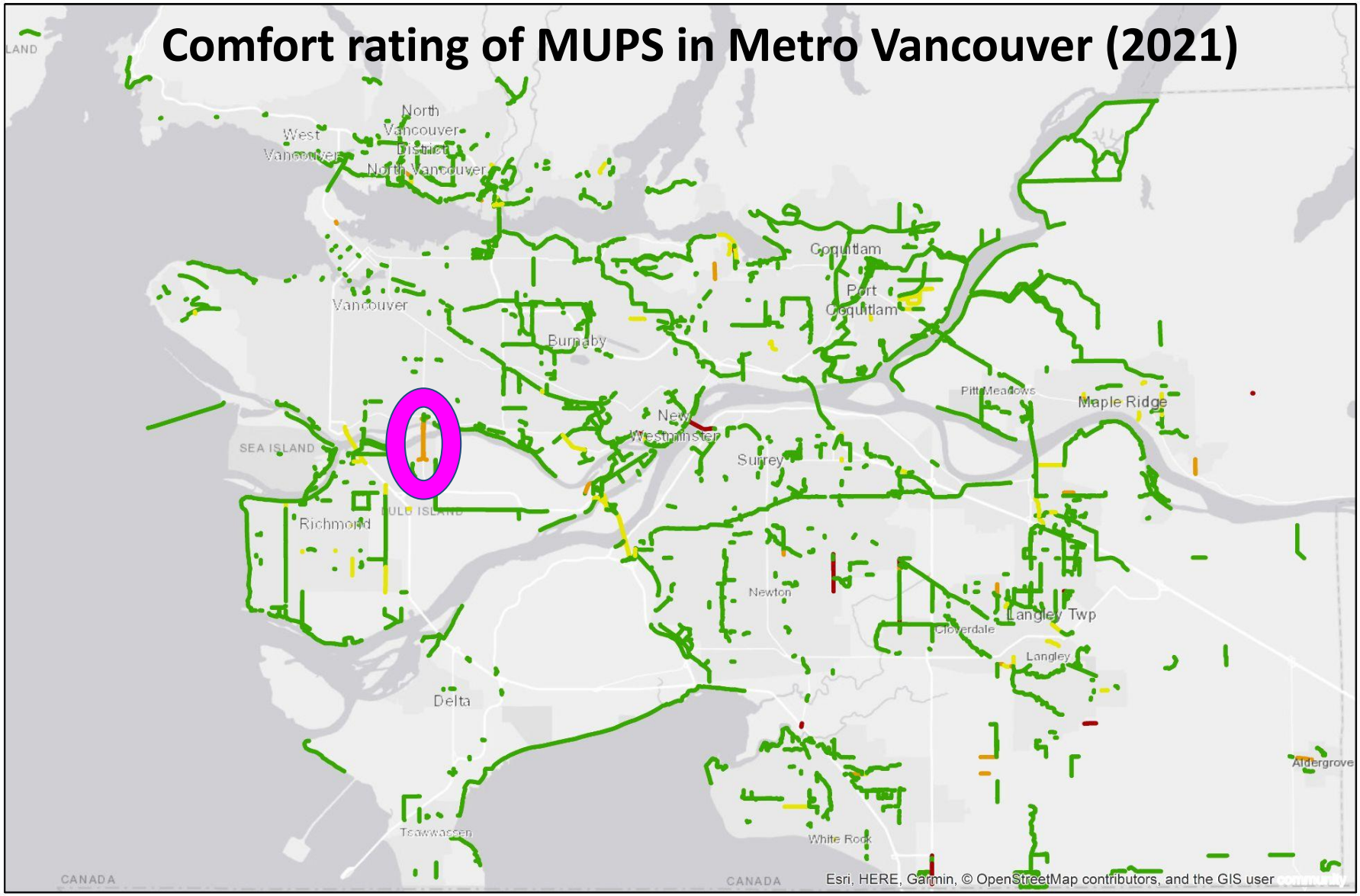
Speed limit 50 kmh
Actual speed > 60 kmh

Paved

Minimal signage & pavement markings

Pattulo Bridge speeds regularly over limit of 50km/h

Comfort rating of MUPS in Metro Vancouver (2021)



COMFORTABLE FOR

MOST SOME FEW VERY FEW

1:250,000

0 2.5 5 10 15 20 km

N W E S

Comfortable for Few

Uni-directional <2.1m

> 60 kmh posted speed

Adequate physical protection as per TAC

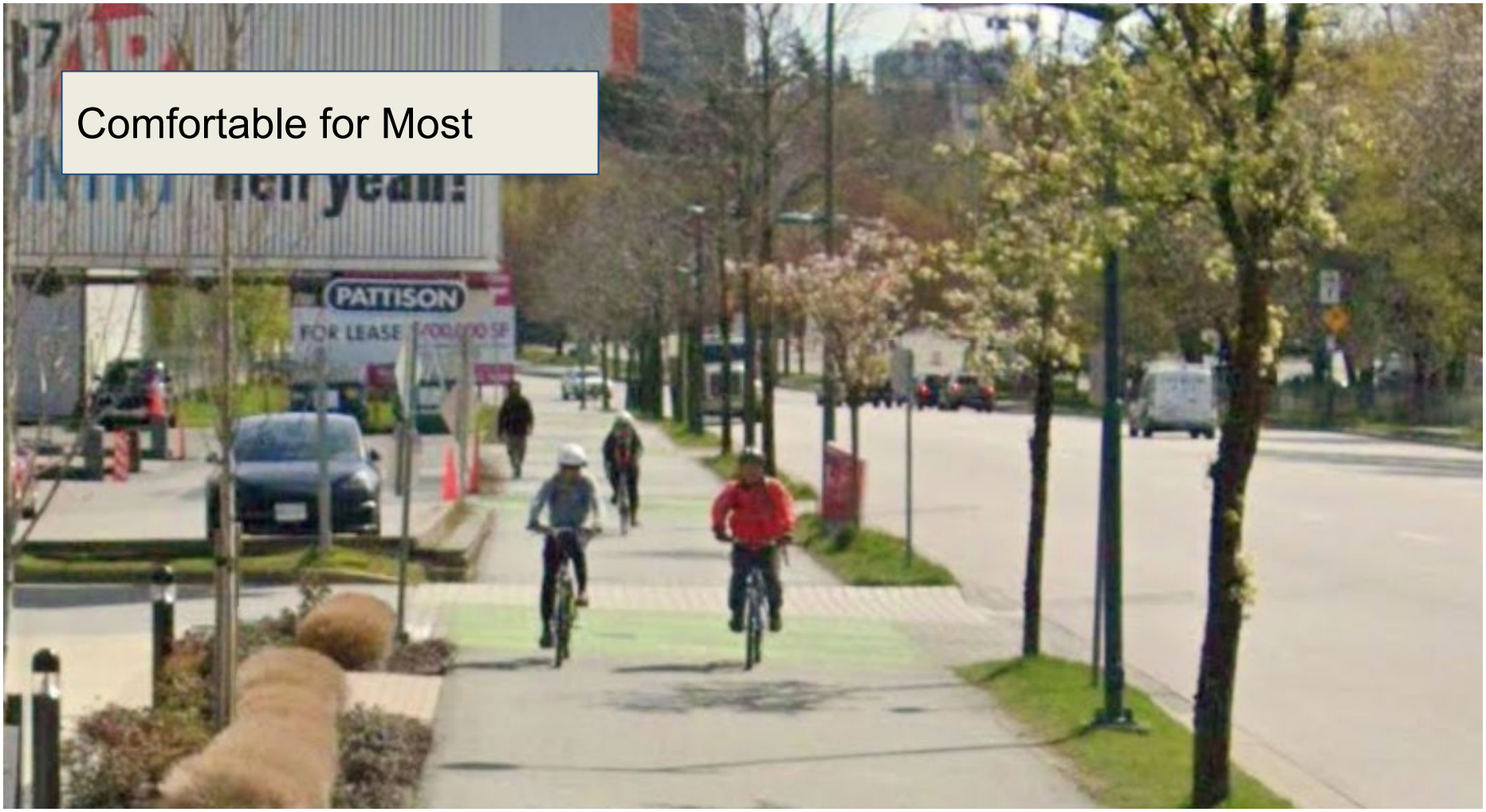
Paved

Minimal pavement markings and signage

Railing is 1.2 m high (TAC min is 1.4 m)

Volume of trucks - high

Knight Street Bridge, 80 km/h posted speed.



Great Northern Way west of Glen Drive

- Adequate width for side by side riding
- Adequate buffer (1.2 m)
- Speed limit on road 50 km/h

Fraser Hwy at 170th St

- Speed limit 70 km/h
- Rigid bollards poorly placed
- Inadequate signage and pavement markings

Comfortable for Few

Stewardson at 5th Ave (BC Parkway)

- Speed limit 50 km/h **(BUT actual speeds are higher)**
- No buffer
- Narrow path
- High volume of trucks

Photo by Fulton Tom. Stewardson at 5th Ave

Highway 15 (176th and 8th Ave)

- Speed limit 70 km/h
- No buffer
- Narrow path
- High volume of trucks

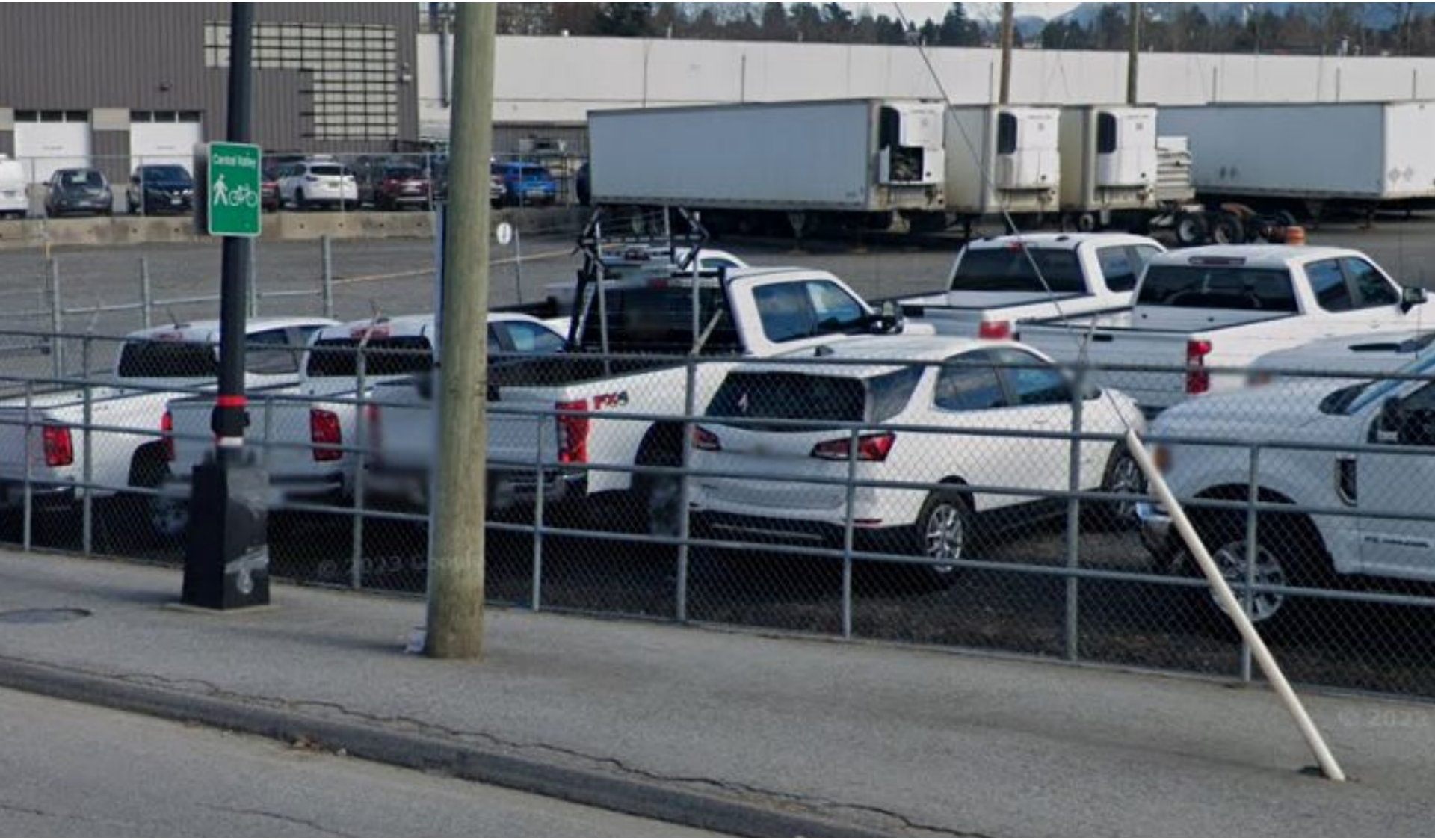
MUP comfort is classified based on:

- Width relative to the volume of users
- Width of buffer relative to the speed of traffic
- Peak hour user volumes
- Surface quality (paved or unpaved)

Other considerations that affect comfort:

- Obstacles within or beside path
- Sight lines & lighting
- Directness
- Markings & signage
- Design of intersections
- Surface quality (smooth, flat & well drained)
- Points of conflict
- Volume & type of adjacent motor vehicle traffic
- …

Obstacles



CVG near Douglas Road & Still Creek Ave. Credit: Google Streetsview

Obstacles

168th Street (near 80th Ave) in Surrey.
Credit: Robert Paddon

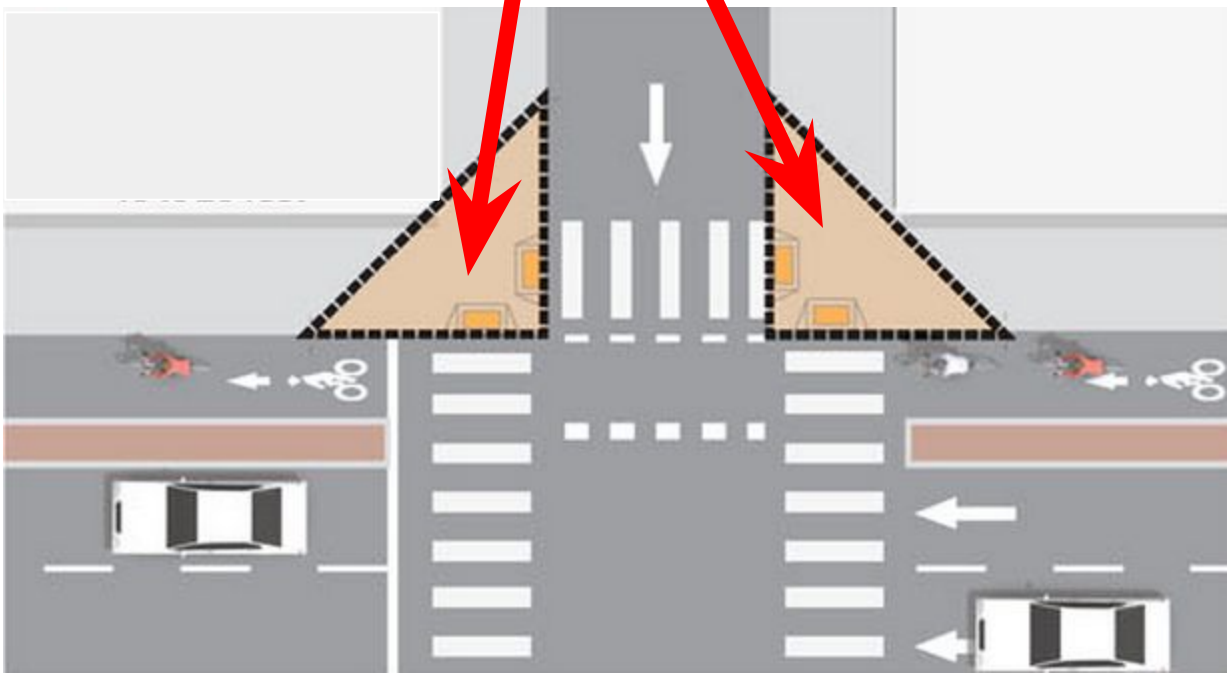
Obstacles

Barrow to Main, North Vancouver. Credit: Derrick Daniels

Sightlines

Keep Clear.. at least

- **3 m for driveways**
- **6 m for minor intersections**



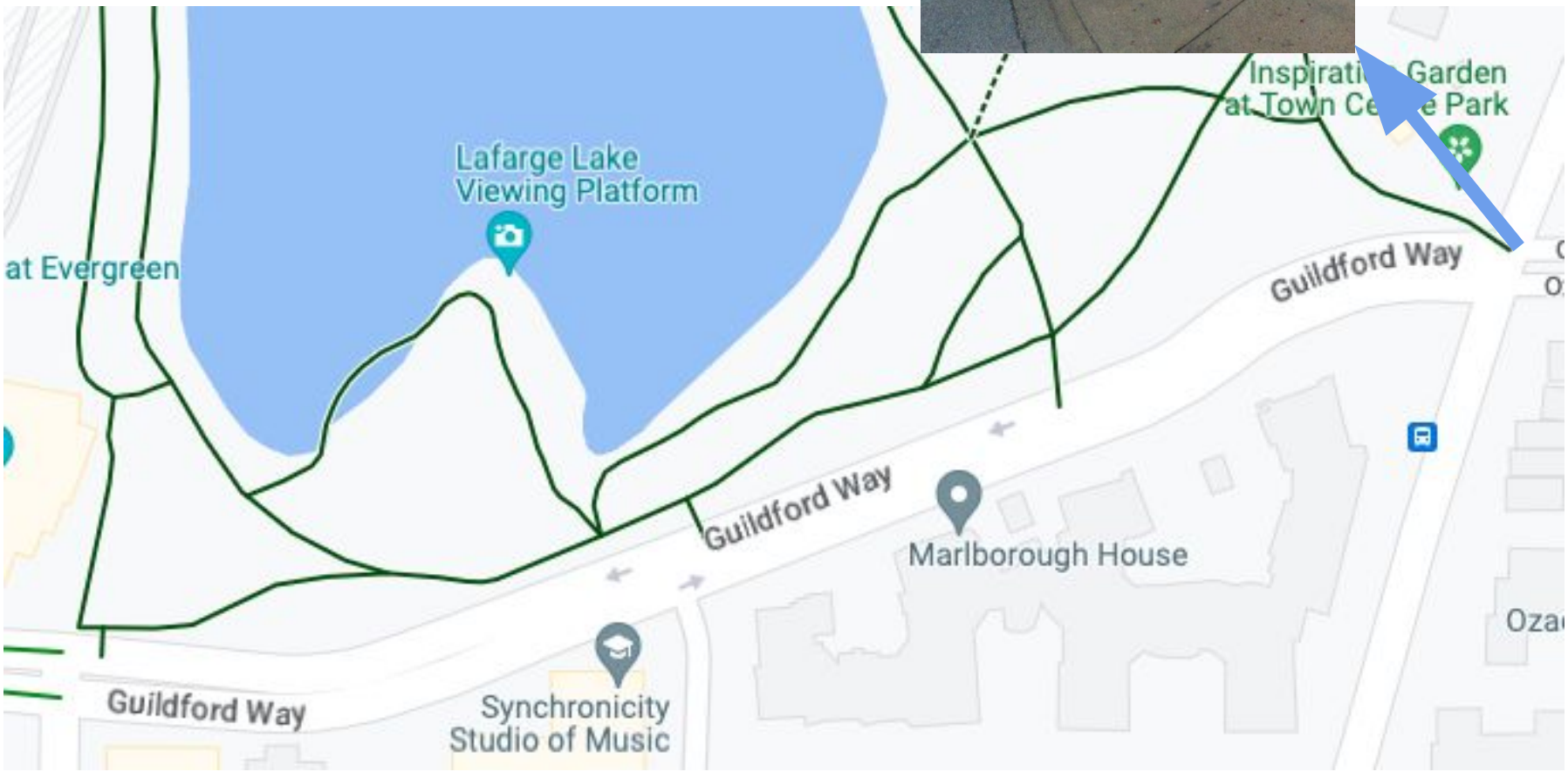
Sightlines

Spirit Trail, North Shore.
Credit: Derrick Daniels

Lighting

BC Parkway at Patterson Avenue. Credit: Google

Directness

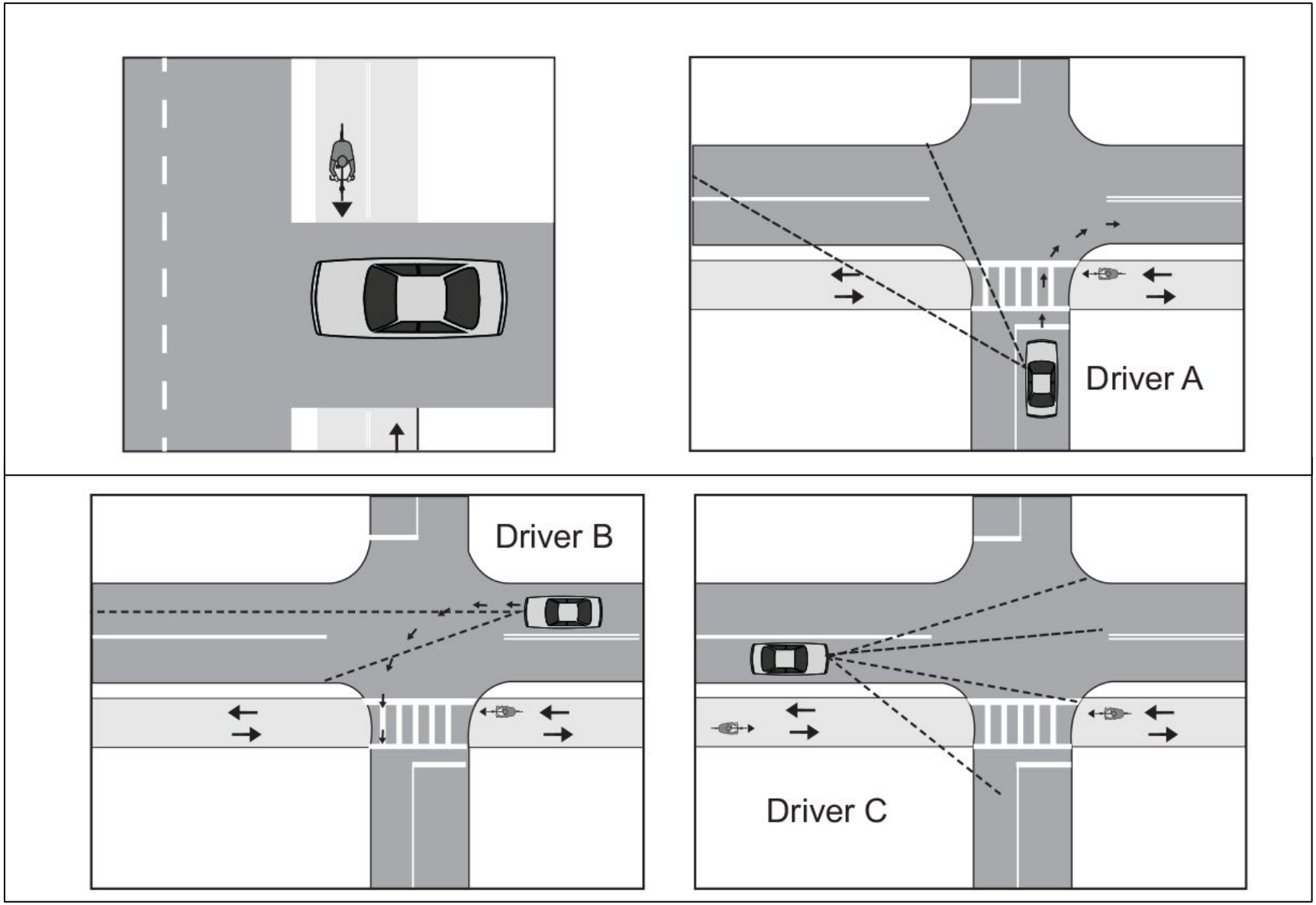


Lafarge Lake MUP off of Guildford Way at Pipeline Rd, Coquitlam. Credit: Google

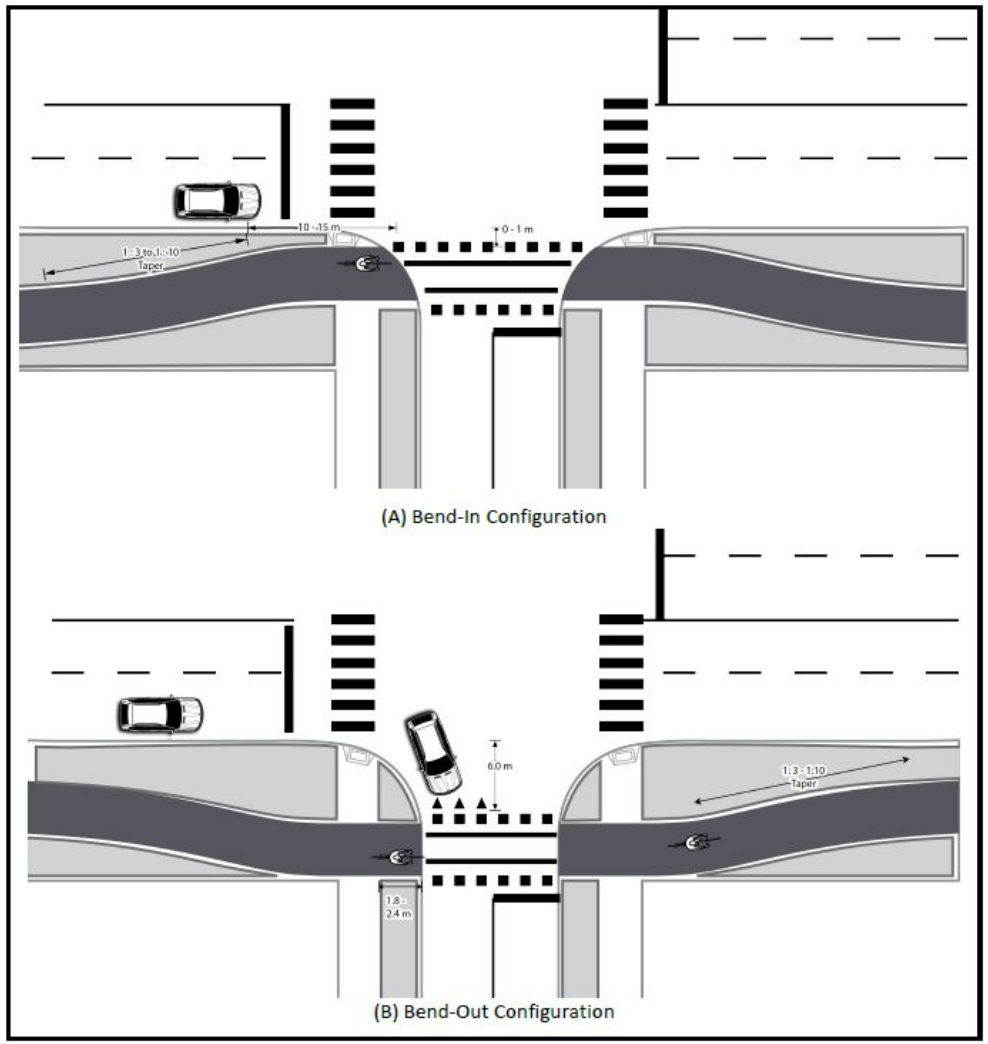
Signage & Pavement Markings

Great Northern Way at Glen, Vancouver. Credit: Google

Intersection design



Mitigation - Bend in and out



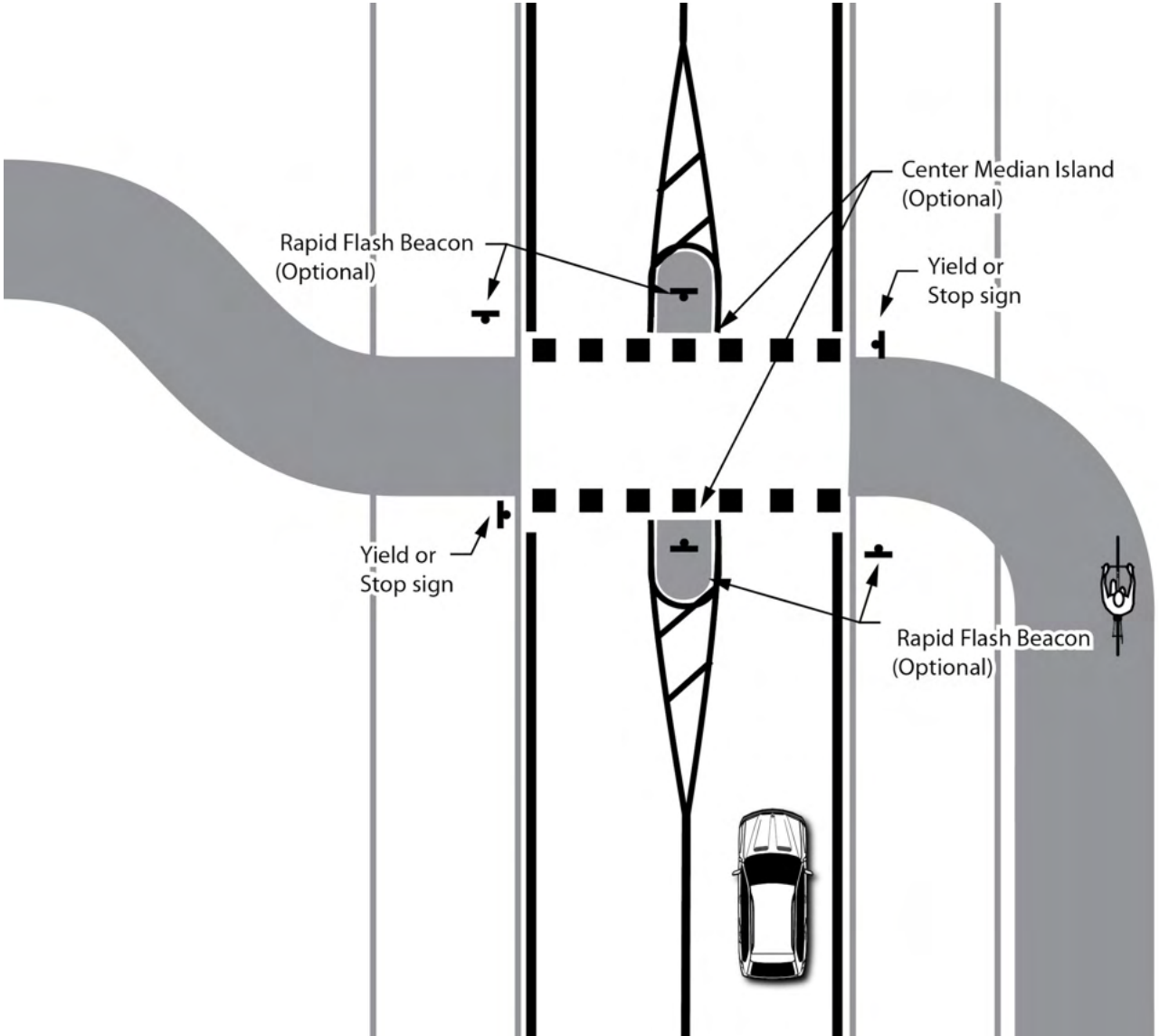
- Bend in on constrained ROWs
- Bend out wherever possible

Mitigation - install MUPs on both sides of 2-way Streets

122 Ave at 221 Str, Maple Ridge.

Credit: Tim Yzerman/Google

Mitigation - Median refuge



Mitigation - Give path users priority

Galloping Goose at Dupplin Rd, Victoria. Credit: Google

- Stop for roadway users
- Level crossing
- Coloured and textured pavement to alert path users to crossing

Avoid wide turning radii & obstacles!

On Abernethy at 227th St, Maple Ridge. Credit: Kay Teschke

Surface quality

Credit: Wendy Faljoun

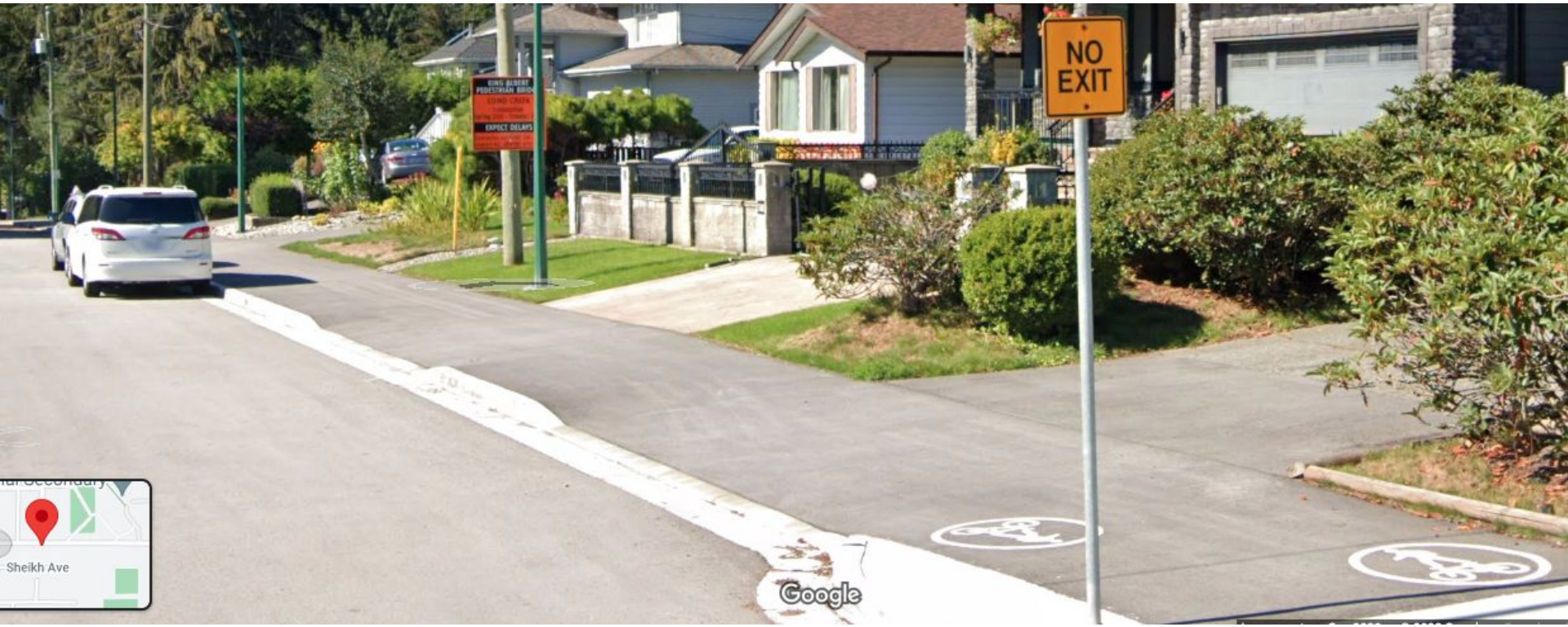
Surface quality

Maple Ridge dike trail credit Kay Teschke

Abrupt grade changes

Skeena Street North, Vancouver Credit: Google/Derrick Daniels

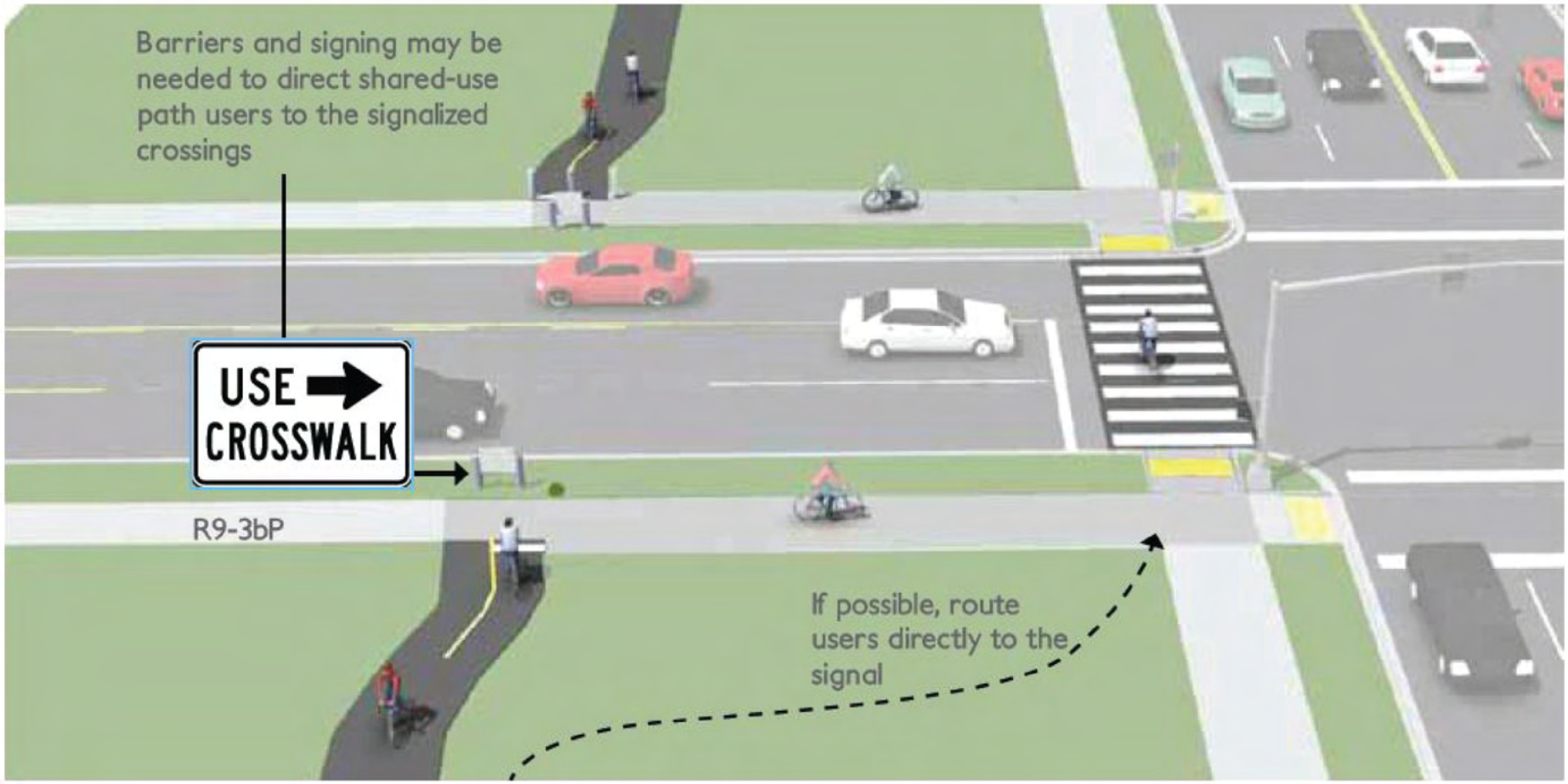
Conflicts



Driveways on King Albert at Schoolhouse, Coquitlam.
Credit: Google Streetsview

Discontinuities

Trans Canada Trail, mid-block at Hastings. Credit Google


Barriers and signing may be needed to direct shared-use path users to the signalized crossings
USE
CROSSWALK
R9-3bP
If possible, route users directly to the signal


XING
HWY

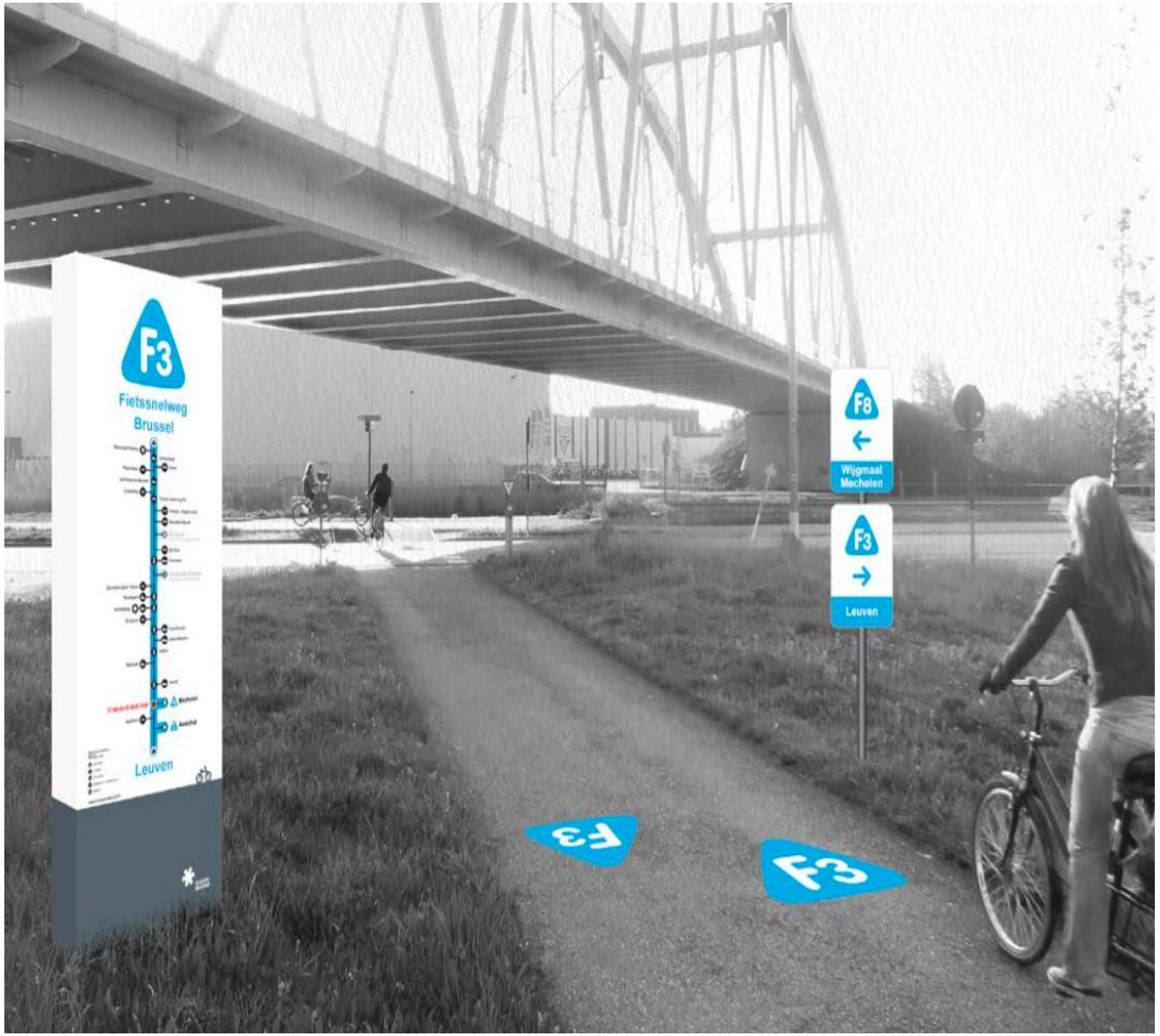
Volume and type of adjacent traffic

Stewardson near 5th Avenue, New Westminster. Credit: Fulton Tom

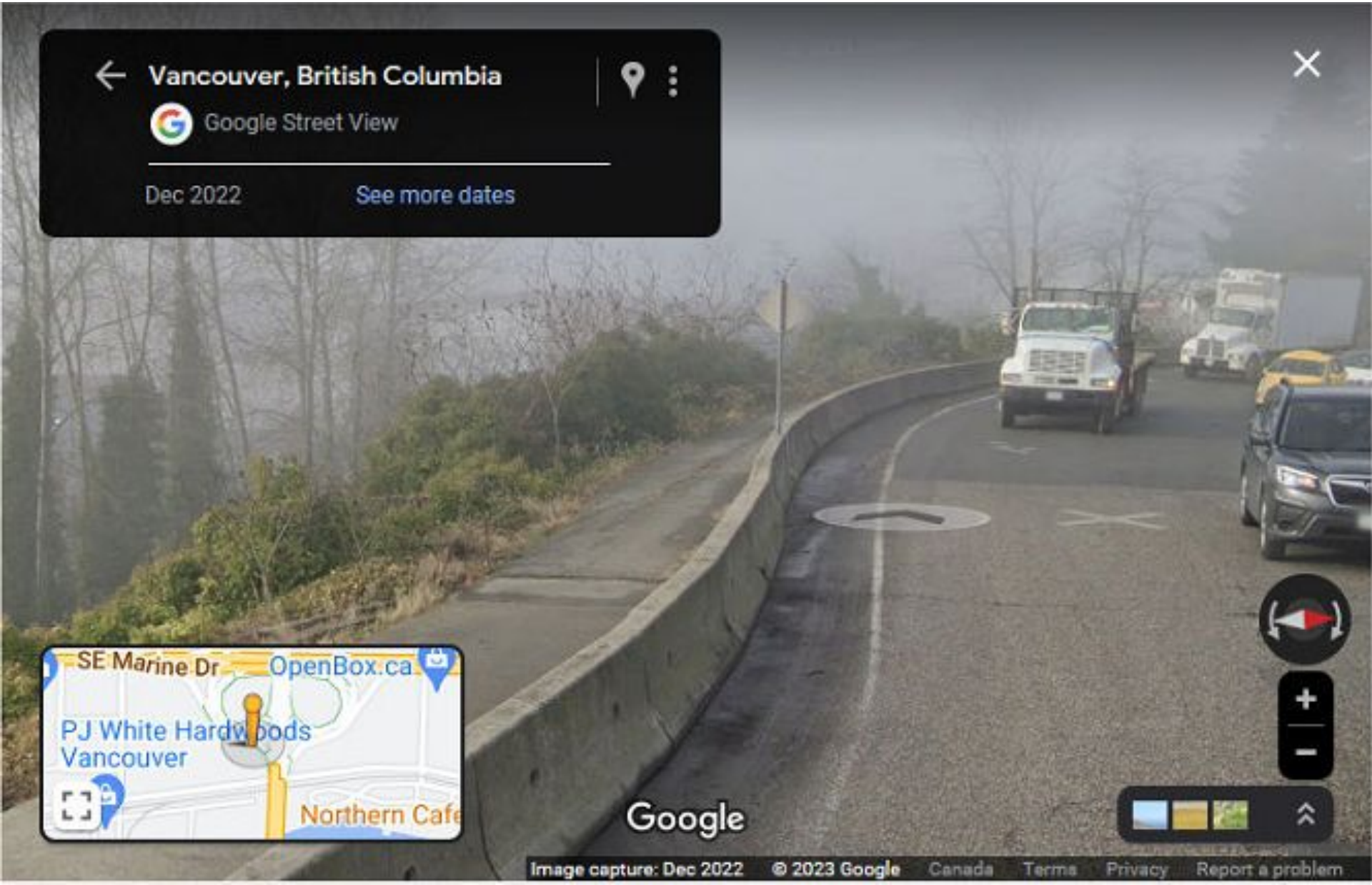
Attractive landscaping and tree cover

Pitt Meadows. Credit: Erin O’Melinn

Branding and wayfinding



Mitigation - Add physical protection



Mitigation - separate users

Great Northern Way west of Glen Drive. Credit: Google

Mitigation - separate users

Great Northern Way west of Carolina Street. Credit: Google

Separate users if …

Separate users if …

- Combined volume over 200/peak hour
- If dogs and kids are regular users
- If elderly are regular users
- If steep grades are present
- If used by commuter cyclists ...

Workshop Discussion

Workshop Discussion

Looking at current HUB Bikeway classification system:

- What are the most important things to consider for the comfort level of MUPs that aren't in the current classification system?
- Do you have additional recommended updates or considerations?

MUP comfort is classified based on:

- Width relative to the volume of users
- Width of buffer relative to the speed of traffic
- Peak hour user volumes
- Surface quality (paved or unpaved)

Other considerations that affect comfort:

- Obstacles within or beside path
- Sight lines & lighting
- Directness
- Markings & signage
- Design of intersections
- Surface quality (smooth, flat & well drained)
- Points of conflict
- Volume & type of adjacent motor vehicle traffic
- …

Thank you

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