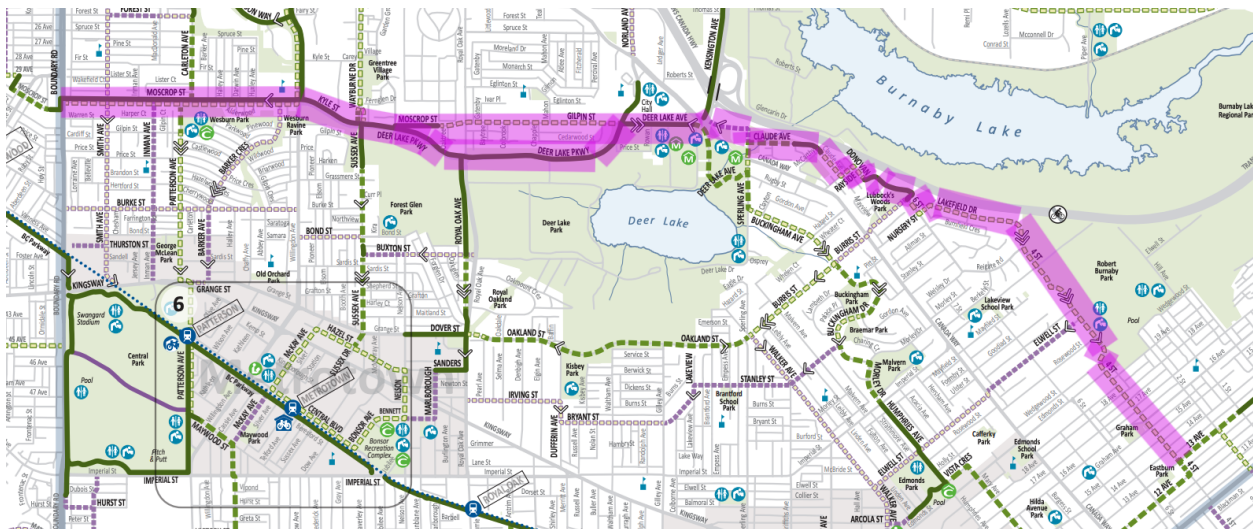


June 28, 2023

# Burnaby Midtown Bikeway Assessment Ride



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# Introduction

Metro Vancouver's Midtown Bikeway is an essential component of cycling infrastructure originating at the south end of Pacific Spirit Park in Vancouver and spanning almost 25 kilometers through Burnaby to New Westminster. Burnaby's part of Midtown accounts for around 33% of Midtown Bikeway's overall length. A majority of Burnaby's section, along with fragments of adjoining bikeways, have been identified as part of the major bikeway network in [Transport 2050 Regional Cycling Network](#)<sup>1</sup>.

In addition to future importance, presently, several major Burnaby civic facilities and amenities are connected by the Midtown Bikeway. Civic facilities such as Burnaby General Hospital, The British Columbia Institute of Technology (BCIT), City Hall, and a number of elementary and secondary schools are directly connected to the route or are less than a kilometer via connecting bike facilities. Parks such as Deer Lake Park and Robert Burnaby Park are accessible directly from the Midtown Bikeway. With the anticipated completion of the Burnaby Lake Overpass, Burnaby Lake and the Burnaby Lake Sports Complex will become even safer and easier to connect to via Burnaby's Midtown Bikeway. This will also connect Central Valley Greenway traffic to Midtown Bikeway.

The Burnaby Local Committee of HUB Cycling conducted an assessment ride of Burnaby's segment of the Midtown Bikeway on Saturday, May 6th, 2023. In its current form, Burnaby's portion of the Midtown Bikeway is lacking or missing features that make it an "All Ages and Abilities (AAA)" bike route.

In this report, the assessment team identified opportunities for improvement and examples of excellent cycling infrastructure. We have summarized our experience riding along the Midtown Bikeway, sorted by theme. In [the appendix](#), we additionally provide a geographically sorted table of identified issues.

## Common Deficiencies

### A. Road Markings At Intersections

Riding along the Midtown Bikeway, the assessment team noticed fourteen crossings with missing road markings such as green conflict paint or elephant's feet (dashed line). Examples are provided in Figure 1. Approaching such intersections or driveways, the assessment team often felt:

- Uncertainty about driver's awareness of people on bikes.
- Doubt about still being on the correct path.
- That people cycling might be liable after a collision, because road markings indicate people would have to dismount bikes and walk across the intersection despite riding along an official

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<sup>1</sup>

[https://www.translink.ca/-/media/translink/documents/cycling/regional-cycling-strategy/regional\\_cycling\\_network\\_map.pdf](https://www.translink.ca/-/media/translink/documents/cycling/regional-cycling-strategy/regional_cycling_network_map.pdf)

bike route. While legally the requirement might be to dismount on a bike route like this, effectively the majority of people cycling will ride across; measures should be taken to remove the conflict between people driving, walking, cycling or rolling and ensure the safety of all road users.



**Figure 1.** a) Intersection at Moscrop and Inman with no elephant's feet or green conflict paint. b) Crossing at Moscrop Secondary School driveway without green conflict paint. c) Crossing at Patterson and Moscrop connecting two segments of the Sea to River Bikeway does not have elephant's feet or green conflict paint. d) Residential driveway without green conflict paint or other markings.

One example of an intersection with elephant's feet is the recently redone crossing of Deer Lake Pkwy, where the Deer Lake Parkway Urban Trail meets the Midtown Bikeway.

Notwithstanding City of Burnaby's current standard limiting use of green conflict paint to bike-only paths, the assessment team suggests that paint be used to highlight conflict zones at crossings and driveways on official bike paths and multi-use pathways (MUPs). This is how paint is used in other municipalities, with effect (Figure 2).



**Figure 2.** Example from Great Northern Way in Vancouver of green paint at conflict zones.

TransLink's [Wayfinding Guidelines for Utility Cycling in Metro Vancouver](#) toolkit highlights the importance of good quality signage to guide users to their destinations. The guide describes how to make the bikeway network easy and intuitive and provides helpful resources to implement a consistent regional wayfinding system for cycling.

## B. Curb Drop Width and Angle

Along Moscrop St between Boundary Rd and Willingdon Ave, all road crossings have curb drops that are angled diagonally out towards the center of the intersection and are too narrow. There is also an angled curb drop at the Deer Lake Ave and Waybourne Dr intersection.

These angled, narrow curb drops are not wide enough to accommodate bidirectional traffic. This can result in conflicts between people riding bicycles traveling in opposite directions, as well as with people walking or using other mobility devices like wheelchairs. They also impose unnecessary bike maneuvering when a bike rider's attention should be focused on looking for people walking, sharing the MUP, and people in vehicles approaching to cross the intersection.



**Figure 3.** a) Angled curb drop at Deer Lake Ave and Waybourne Dr. Note that the bollard and light pole add to the

navigating difficulty to reach the angled drop. b) Example of angled curb drop on Moscrop St.

## C. Call Button Placement

There are a number of intersections along the route where people on bikes have to cross into oncoming people walking on the sidewalk or on wheelchairs to press the call button. This increases the risk of conflict with people walking, people using wheelchairs, and other people on bikes or other modalities of travel. Having a call button on each side of the MUP would reduce the risk of collisions around intersections.



**Figure 4.** MUP on the Northwest corner of Moscrop St and Smith Ave. Purple arrows show the suggested location for the call button.

People riding bikes and people walking as well as using wheelchairs could enjoy better and safer travels if, instead of using call buttons, a crossing phase was built into every cycle. The City can also consider using ground-activated call buttons like what is used in New Westminster (Eighth St and 8th Ave intersection), Victoria, Calgary, and Edmonton. Figure 5 shows a case study of this system.

## Case Study

Several cities, including Calgary, Edmonton, and Portland have used small blue confirmation lights to provide confirmation to bicycle users that they have been detected at actuated approaches to traffic signals. The intent of the installation is to provide feedback to help reduce the level of stress for waiting bicycle users. Given the relatively low cost of installation, the intent is that these could be tools for creating infrastructure that promotes mobility and efficiency for people cycling. Research is limited on the effect of the confirmation devices, accompanying informational signs, and countdown timers on the behavioural and psychological effects for bicycle users. One recent study has shown positive impacts of using a blue light feedback confirmation device along with an informational sign at signalized intersections to aid bicycle detection, with a significant decrease in the number of bicycle users getting off their bicycle to use the pedestrian push button for detection.<sup>1</sup>

<sup>1</sup> Boudart, J., Liu, R., Koonce, P., and L. Okimoto. An Assessment of Cyclist Behavior at Traffic Signals with a Detector Confirmation Device. Transportation Research Record, Journal of the Transportation Research Board, No. 2520, Transportation Research Board of the National Academies, Washington D.C., 2015, pp.21-26.



Bicycle detection light, Calgary, Alta  
Source: Shea Friesen

**Figure 5.** Excerpt from the BC Active Transportation Design Guide 2019. These would eliminate the need for people cycling to dismount to push the call button. This system is used at Eighth St and 8th Ave in New Westminster.

## D. Signs and Path Markings

Although the Midtown Bikeway is an official bike route and the assessment team had looked at the Burnaby cycle map before riding it, in some places, it was extremely challenging to find the correct route. Additional signs and markings would make it easier for new riders to navigate the Midtown Bikeway.

For example, the MUP on the north side of Moscrop St is not marked. As such, it is unclear this is actually bike accessible and not just a sidewalk. Improved markings in the form of paint and/or vertical signage would help indicate to people cycling, walking and using wheelchairs that this is a shared path and help reduce conflict between different modes. The signage currently used on the Sea-to-River bike route would be suitable (Figure 6).



**Figure 6.** Example signage that would be suitable to mark the MUP along Moscrop.

When crossing Canada Way eastbound, the assessment team first saw the "Do Not Enter" signs at Gilpin St and only later noticed the much less prominent bike route sign. One Midtown Bikeway arrow sign at the Canada Way intersection points in the wrong direction (Figure 7).



**Figure 7.** The Midtown Bikeway sign points to the left, which is towards oncoming Canada Way traffic.

The entire section of the Midtown Bikeway in the residential area east of the Canada Way crossing (Gilpin St to 4th St) has very few signs to mark the bikeway.

## E. Width and Condition of Paths

The sections of MUPs along Midtown Bikeway are mostly smooth without cracks in the pavement and sufficiently wide. For example, the MUP parallel to Highway 1 (connecting Donovan Ave to Burris St) is 10 ft wide, perfectly smooth, and lit at night. The MUP along Deer Lake Pkwy between Willingdon Ave and Wayburne Dr feels narrow for bidirectional traffic, has cracks in the pavement, and has been damaged by tree roots.

## F. Traffic Calming and Grade Separation

Gilpin St between Royal Oak Ave and Deer Lake Pkwy does not offer any physically protective infrastructure. Riding on a Saturday, we encountered little traffic and could take the lane. However, traffic to and from the school can be significant during the week. Many people riding along Gilpin St, especially school children riding or rolling to school, may not be comfortable taking the lane, particularly with rush hour traffic volumes. Road markings, perhaps speed bumps, or other traffic calming measures would make Gilpin Street more accessible to riders of all ages and abilities. Ideally a separated bike path would be installed, forming a contiguous all ages and abilities route from Boundary to Canada Way. The City can consider adding bypass signs for people cycling to take Deer Lake Pkwy Urban Trail instead of Gilpin St.


# Appendix: Table of opportunities for improvement




Table 1 presents the issues along the Midtown Bikeway. The route is broken down into six segments to organize the findings.



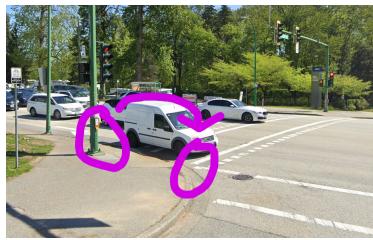

The rating in the rightmost Safety/Comfort level column reflects our committee's perceived impact of the deficiency on meeting the "All Ages and Abilities" bike route requirement for a route to be "low stress", taking into account the following:



- surrounding busyness of car traffic and potential risk of being struck by a vehicle
- ease of ability to navigate the bike route (e.g., absence of wayfinding or signs), a deficiency which may lead to confusion from other road users
- characteristics of the bike path (e.g., narrowness of path, proximity to lamp post and/or bollards)
- legality of a cyclist being on path (e.g., a cyclist riding across a crosswalk without elephant's feet is illegal)



**Table 1. Issues identified by the assessment team along the Midtown Bikeway. The information is mostly presented in a west to east manner.**



Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
<b>SEGMENT 1 - BOUNDARY RD. TO WILLINGDON AVE.</b>				
1.1	Residential alley with no pavement markings.		Along Moscrop St.	Low



Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
1.2	No elephant's feet markings.		All crossings along Moscrop St. MUP with side streets between Boundary Rd. and Willingdon Ave.  Moscrop St. MUP beside Moscrop Secondary	Medium
1.3	Pothole indent in the ground		Moscrop St. MUP beside Moscrop Secondary	Medium
1.4	No directional signage to let people cycling southbound on Carleton Ave. know to use the MUP along Moscrop St. to continue down along Patterson Ave.		Moscrop St. and Patterson Ave./Carleton St.	Medium



Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
1.5	Add a call button to the South side of MUP, replace call buttons with pre-timed crossing signals, or consider ground-activated call buttons.		Eastbound Moscrop at Smith	Low
1.6	Curb cuts at crossings are angled and do not allow people cycling to easily go straight along the MUP at intersections.		All crossings along Moscrop St. MUP with side streets between Boundary Rd. and Willingdon Ave.	High
1.7	Add a call button to the South side of MUP, replace call buttons with pre-timed crossing signals, or consider ground-activated call buttons.		Eastbound Moscrop at Willingdon	Medium
<b>SEGMENT 2 - WILLINGDON AVE. TO GARDEN GROVE DR.</b>				
2.1	No sign indicating the path for people cycling vs. walking, despite the two paths being separated.		Along Deer Lake Ave. between Willington St. and Waybourne Dr.	Medium




Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
2.2	Curb cut angle does not allow people cycling to go across the intersection while going straight.		Deer Lake Ave. and Waybourne Dr.	High
<b>SEGMENT 3A - GARDEN GROVE DR. TO DEER LAKE AVE. VIA MOSCROP &amp; GILPIN ST.</b>				
3a.1	No pavement markings or signs indicating bike crossing.		Moscrop St. at Garden Grove Dr.	Medium



Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
3a.2	No directional signs indicating the option for the turn-off onto Garden Grove Dr to access Moscrop St/Midtown Bikeway, or continuation along Deer Lake Pkwy. A bypass sign might be appropriate to allow people cycling to choose an AAA route (Deer Lake Pkwy) over Gilpin St.	 <p>Looking east from Deer Lake Pkwy.</p>	Deer Lake Pkwy at Garden Grove Dr.	High
3a.3	No directional signs to indicate bike route, for both eastbound and westbound directions of the bikeway.	 <p>Looking north from Garden Grove Dr.</p>	Garden Grove Dr. at Moscrop St.	High

Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
3a.4	No shared pathway signs or bike accommodations; people cycling are forced to ride on the sidewalk to access the bike route on Moscrop St.	 <p>Looking north from Garden Grove Dr.</p>	Garden Grove Dr. at Moscrop St	Medium
3a.5	No pavement markings.	 <p>Looking east along Moscrop St.</p>	4900 block of Moscrop St.	Low


Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
3a.6	Sharrow pavement marking is outdated and unidirectional.		4900 block of Moscrop St.	Low
3a.7	No bike infrastructure along Gilpin St. Road can be busy during rush hour and school time. Parked cars force people on bikes into traffic. 30 km/h speed limit from 7am to 10pm Monday to Friday, but no other speed control implementations (e.g. speed humps, road narrowing, protected bike lanes).	 Looking east along Gilpin St.	Gilpin St. between Royal Oak Ave. and Deer Lake Pkwy.	Medium




Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
3a.8	<p>No directional sign or pavement markings directing people cycling from Gilpin St. to proceed onto the MUP on the west side of Deer Lake Pkwy.</p> <p>Well-placed bicycle call button.</p>	 <p>Looking east on Gilpin St.</p>	Gilpin St. at Deer Lake Pkwy.	Low
<b>SEGMENT 3B - GARDEN GROVE DR. TO DEER LAKE AVE. VIA DEER LAKE PKWY.</b>				
3b.1	<p>Dangerous blind spot at the slip lane. People cycling can not see cars coming southbound on Royal Oak Ave. and turning right along the slip lane onto Deer Lake Pkwy. westbound. Drivers also can not see people cycling around the blind corner.</p>		Deer Lake Pkwy. at Royal Oak Ave.	High





Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
3b.2	No elephant's feet at the busy intersection and the two slip lanes on both the west and east sides.		Deer Lake Pkwy. at Royal Oak Ave.	High
3b.3	Lack of lighting		Deer Lake Pkwy, East of Royal Oak Ave	High
3b.4	Add a call button to the East side of MUP, to activate both Northbound and Eastbound pedestrian/bike signals, replace call buttons with pre-timed crossing signals, or consider ground-activated call buttons.		Eastbound and Northbound MUP at Deer Lake Pkwy, Deer Lake Ave, and Gilpin	Medium




Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
3b.5	Add a call button to the North side of MUP, to activate Westbound ped/bike signal, replace call buttons with pre-timed crossing signals, or consider ground-activated call buttons.		Westbound MUP on Deer Lake Ave/Gilpin, at Deer Lake	Medium
<b>SEGMENT 4 - DEER LAKE AVE. TO CANADA WAY</b>				
4.1	MUP narrows between bus stop and flower bed		Bus stop Rowan Ave, south side of Deer Lake Ave.	Medium



Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
4.2	Lack of elephant's feet on the MUP. These are busy parking lots with consistent traffic in and out.		Parking lot exit to Deer Lake Ave. across from Century Park Way, and also at Rowan Ave. and the Art Gallery.	Medium
4.3	Missing elephant's feet and missing/wrong wayfinding signs. Having to wait for three lights to cross over to the other side of the Midtown Bikeway.		Canada Way crossing at Kensington Ave.	High



Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
4.4	No pavement markings indicating people cycling can bike on the path.		Near Canada Way and Kensington Ave.	Medium

Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
4.5	Narrow sidewalk and sharp corner. Potential conflict between people cycling, and also between people cycling and pedestrians.		Near Canada Way and Kensington Ave.	Medium
4.6	Add a call button to the East side of MUP, or replace call buttons with pre-timed crossing signals.		Northbound crossing Canada Way at Kensington	Medium
<b>SEGMENT 5 - CANADA WAY TO ROBERT BURNABY PARK</b>				
5.1	No directional sign to turn on Sperling Ave from Gilpin, then left on Claude Ave when traveling East. Similarly, no directional signs when traveling West as well. No pavement markings. Easy for people cycling to mistakenly cycle up Sperling instead of turning, if they are not familiar with the area.		Sperling Avenue between Gilpin and Claude.	High

Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
5.2	Blind corner at Claude and Wilton when traveling West and no sightlines for people cycling traveling East on Midtown and entering Claude Ave.		Corner of Claude and Wilton.	High
5.3	No directional signs to indicate bike route when exiting MUP. No pavement marking.		Corner of McCarthy Ct and Claude Ave.	Medium
5.4	No directional signs to indicate bike route. No pavement marking.		Corner of Claude Ave and Rayside St.	Medium
5.5	No directional signs to indicate bike route. No pavement marking.		Corner of Rayside St. and Donovan Ave.	Medium

Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
5.6	Entrance to MUP well hidden at the end of the cul-de-sac. More prominent marking recommended.		5600 Block Donovan Ave.	Medium
5.7	Midtown Sign for Eastbound travelers, but no wayfinding or directional signage for Westbound Travelers. Travelers unsure of whether the gravel path on the left of the road is appropriate or if they are to continue on the road. No pavement marking.	 	6th Street and Burris St.	High

Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
5.8	No directional sign or pavement markings directing bikes from 6th St. to Nursery in either direction.		6th St. and Nursery Ave.	Medium
5.9	No directional signs or pavement markings at Nursery St and Lakefield Dr		Nursery St and Lakefield Dr.	Medium
5.10	No pavement markings from Lakefield Dr to 4th St. Add sharrows		Lakefield Dr between Nursery St and 4th St	Medium
5.11	Elwell is inaccessible to people cycling but marked an alternate cycling route with pavement markings.		4th St. and Elwell St.	High

Issue code	Issue description	Photo	Location	Safety/ Comfort Level Impact (High, Medium, Low)
5.12	No wayfinding at 4th St. and Edmonds St. No pavement markings.		4th St. and Edmonds St.	Medium
<b>SEGMENT 6 - ROBERT BURNABY PARK TO 13TH AVE.</b>				
6.1	No wayfinding signage along this section.		Entire section	Medium
6.2	No pavement markings indicating this is a bike route. Add sharrows		Entire section	High
6.3	No directional signage indicating the continuation of the Midtown Bikeway, both from 13th Ave. (going southeast) and from 4th St. (going southwest)		4th St. and 13th Ave.	Medium

