



Your **Cycling** Connection

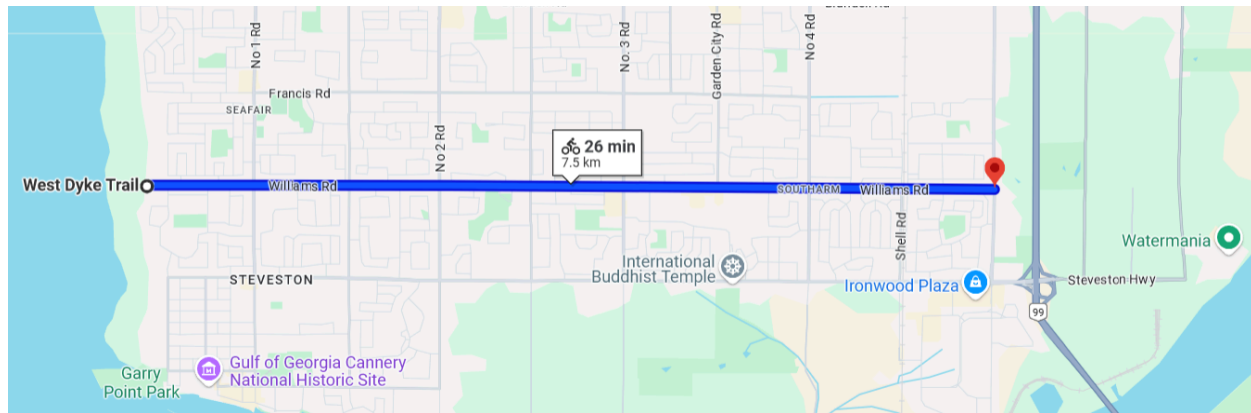
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Assessment Ride Report: Shell Rd, North

Prepared by the Richmond/YVR Local Committee of HUB Cycling

2024-11-04



In support of the City of Richmond's plans to make spot improvements to active transportation infrastructure along Williams Rd, the HUB Cycling Richmond/YVR Local Committee conducted an assessment ride on 2024-10-27 along the length of Williams Rd to identify low-cost opportunities for improvement. We present here a summary of our observations and recommendations.

Recessing vehicle stop lines and/or advancing bike stop line

One reason why protected intersections (the gold standard for safe intersections for vulnerable road users) are advantageous is because while waiting at a red light, people walking and cycling are physically in front of stopped vehicles. This makes them more visible to drivers and gives them a head start while crossing the intersection. While installing protected intersections is likely out of scope for this project, similar benefits would be realized by putting the stop line for the bike lane in front of the stop line for vehicles. Anecdotally, during a red light, if there are no people crossing in the other direction, some cyclists will advance into the crosswalk to stay ahead of drivers for the same reasons.

If this is done, the location of bike and vehicle detection sensors may need to be adjusted. Traffic signal timing may also be slightly modified (e.g. reducing the red clearance interval to account for the increased starting distance to the intersection) to minimize impacts to intersection efficiency.



Example of intersection with poorly placed bicycle detector (circled in red). While the stop line for bikes is in line with that of vehicles, the bike detector is recessed far back, leading to the bike stop line being effectively further back than it is.

Add bollards/delineators near the intersection for the bike lane

Adding bollards/delineators near the entrance and exit of bike lanes at an intersection will help prevent drivers from making right turns that are too sharp and entering into the bike lane.



Example of proposed placement of bollards, taken facing east. For vehicles coming from the right of the photo and turning right to head east, bollards here prevent vehicles from entering the bike lane.

Reallocate space to extend bike lane into the intersection

In conjunction with the above recommended bollard placements, bike lanes should generally be extended to reach the intersection. We observed a number of intersections where the bike lane either disappeared just before the intersection or was marked as a broken line, permitting drivers to enter the bike lane to make right turns. Considering that most accidents happen at intersections, losing dedicated space and protection at the intersection is exactly the opposite of what should be done to minimize accidents and near-misses.



Example of bike lane that no longer becomes dedicated space near the intersection as indicated by broken line



Example of bike lane that disappears before the intersection

Improving wayfinding at Ash Street/Parkside Neighbourhood Bike Route

The Parkside Neighbourhood Bike Route intersects/ends at Williams Rd at Ash Street. However, there is no indication of this route. Wayfinding signs should be installed to indicate the Parkside route to people cycling eastbound or westbound on Williams Rd.

Additionally, people cycling southbound on Parkside can continue down to the Steveston Hwy MUP via South Arm Park/Ryan Rd; indeed this route is marked as part of the Cycling Network Plan short-term. Thus, wayfinding signs should be installed to direct people cycling southbound on Ash Street to continue south via Williams Rd and South Arm Park.

Validate signal timing at Shell Rd crossing

Shell Rd is a double crossing, and designed so that people should not get stranded in the middle. From the October 2024 Richmond Active Transportation Committee (RATC) meeting, however, some people report that the green light phase is too short to make it across on a bike. We recorded the signal timing here: <https://youtu.be/-kNLIN3twus>. The second set of lights follows an unintuitive pattern, where it only turns red briefly, before turning green again for a few seconds, then red again for a longer time. This may be an unintended pattern, since the first red phase does not seem to be useful.

We measured the time from the first yellow to the second red to be approximately 12 seconds. For someone cycling at 18km/hr, this represents a travel distance of 60m. A measurement with Google Maps satellite image suggests that the intersection is about 60~70m long. This rudimentary calculation suggests that the intersection timing was possibly not designed with people cycling in mind; the timing calculations should be re-checked to confirm whether someone cycling can make it across both intersections in the available time.

Use leading pedestrian/bicycle intervals

Designing signal lights to provide leading pedestrian and bicycle intervals (possibly upon detection of people walking/cycling) lets vulnerable road users get a head start on crossing intersections, making them more visible and reinforcing the right of way.

Permitting people to ride through pedestrian crossings

We observed a number of pedestrian crossings between major arterials connecting neighbourhood streets from one side of Williams Rd to the other. Conceivably, people cycling north/south via neighbourhood streets could use these crosswalks to cross major roads like Williams Rd. Thus, it may be appropriate to add elephant's feet to these crosswalks and permit people to ride through.



Example of mid-street pedestrian crossing

Pedestrian crossings were observed at Fortune Ave, Freshwater Dr, Lassam Rd, Sheridan Rd, Deagle Rd, Dunoon Dr, Leonard Rd, and Aquila Rd.

Assess and improve pedestrian safety at Gilbert Rd intersection

Concrete barriers were installed at the northwest corner of Gilbert Rd and Williams Rd, presumably to limit damage if a vehicle drives into that corner. However, this increases the risk for people waiting at that corner, who would be crushed in such an accident. The impact of the concrete barriers on pedestrian safety should be evaluated, and mitigated accordingly.



Yellow concrete barriers visible at northwest corner of Williams and Gilbert

Address road work policy to keep obstacles outside of the bike lane

We observed traffic cones from the No. 2 Rd MUP construction obstructing the bike lane. Needless to say, this obstruction is not conducive to a comfortable cycling experience, and the City should take efforts to avoid similar incidents. These traffic cones could have been placed with zero or minimal obstruction to the bike lane and achieve the same effect.



Photos showing traffic cones obstructing the Williams Rd bike lane

Additional recommendations

The remaining concerns and recommendations involve more significant changes and addressing them may be out of scope for this improvement project. Nonetheless, we list them here for completeness and future reference.

Rearranging road space to avoid dooring risk west of No. 1 Rd

West of No. 1 Rd, there is a parking lane on the south side of the road, beside the eastbound bike lane. This presents a dooring hazard. There are a number of possible ways this could be addressed in the future, many of which are low cost:

- Remove the parking lane
- If space permits, merge the two unidirectional bike lanes and create a two-way protected bike lane on one side, with some small buffer space from parked vehicles/vehicle traffic. Vehicles may be able to use the parking lane to pass oncoming traffic.
- Alternatively, both bike lanes could be put on one side and the parking lane on the other, although this would be an unconventional design.
- Vehicle volumes are likely low enough that if traffic speeds can be reduced to 30 km/hr, the road could be used as a shared neighbourhood street. Parking could be permitted on both sides of the road to further narrow the road and calm traffic.



Parking lane beside bike lane west of No. 1 Rd

Adding pedestrian crosswalk at South Arm Community Centre

South Arm Community Centre is a major destination, and it may be desirable to add a pedestrian crosswalk directly across from it to make it more easily accessible. This would also serve people cycling using the westbound bike lane when arriving to or leaving from the community center. Currently, the nearest crosswalks are at Garden City Rd and Leonard Rd.

Adding bollards/other separation along the length of Williams Rd

While Williams Rd carries lower vehicle traffic volumes compared to other arterials in Richmond, there is only one vehicle travel lane in each direction on Williams Rd. In contrast, other arterials in Richmond typically have two travel lanes per direction, with traffic split between them. Because traffic is concentrated to one lane on Williams Rd, when considering the frequency of vehicles closely passing people cycling (an important factor in rider comfort), Williams Rd has comparable frequency as an arterial road carrying twice as much traffic. This amplification of cross-passing vehicles should be considered when evaluating which bike routes should have additional separation installed next.

About HUB Cycling

HUB Cycling is a charitable not for profit organization that has spent over 25 years removing barriers to cycling in Metro Vancouver, while cultivating the health, environmental, and economic benefits that active transportation can bring. HUB has educated thousands of people, motivated thousands more, and championed improvements that [#UnGapTheMap](#) to create a connected cycling network. HUB Cycling's mission is to get more people cycling more often. HUB Cycling has over 3,000 members and more than 50,000 direct supporters. HUB Cycling has 10 volunteer committees across Metro Vancouver that encourage cycling for all ages and abilities (AAA) in municipalities across Metro Vancouver. For more information, visit bikehub.ca.