

Safe Healthy Bridges for Everyone

Recommendations for Pedestrian and Bicycle Improvements to the Fremont and Ballard Bridges

July 28th, 2020

Overview

The Problem: Unsafe Crossings

On a normal day in Seattle, thousands of cyclists and pedestrians share the sidewalks on our local bridges to cross the Ship Canal--on their way to work, on their way to school, on their way to shop, on their way to a park--but these days hardly qualify as “normal.” While the COVID-19 crisis has resulted in a reduction in commuting traffic of all kinds, the quarantine period has also seen a dramatic surge in the popularity of cycling, especially during weekends and on local bike trails, with [usage up as much as 70%](#). While more people than ever are turning to cycling--and walking--as safe and healthy ways to travel about their neighborhoods, the need to maintain a safe “social distance” has highlighted the already hazardous conditions faced by cyclists and pedestrians on our local bridges: **the shared sidewalks on our bridges are unsafe.**



Photo 1-2: Existing conditions - opposing bicyclists along the northbound east side of Ballard Bridge

Fremont Bridge sidewalk, left; Ballard Bridge, right (courtesy of Cascade)

The narrow sidewalk passages on our bridges were never designed to accommodate two-way multi-use traffic. Neither the Fremont Bridge nor the Ballard Bridge nor the University Bridges nor the Ballard Locks, provide anywhere near the [8-12' lane width recommended by NACTO](#) to support two-way bicycle traffic. In addition to the general risk of collision and injury, these sidewalks are not wide enough to provide sufficient space for maintaining an appropriate “social distance” when passing. Of the bridges spanning the Ship Canal, only the University Bridge provides separate facilities for cyclists and pedestrians, yet this bridge is not within a convenient travel distance of cyclists and pedestrians living in Northwest Seattle.

With the current low volumes of motor vehicle traffic, it is not uncommon to observe more experienced cyclists crossing these bridges in traffic in order to utilize a separate channel from pedestrians. However, as restrictions relax and motor vehicle volumes increase it will no longer be safe to ride across the bridge deck in traffic as an alternative to riding on the bridge sidewalks. It is also worth noting that the bridge decks were not designed to support bicycle traffic and, as a result, the gratings can become treacherous to navigate when wet. Clearly, riding in traffic to cross the Ship Canal is dangerous even in the best of weather and is not a solution that supports cyclists of all ages and abilities.

Likewise, as more people return to work, we can expect the numbers of people cycling to increase dramatically during commute hours, especially for those who choose to use cycling as an alternative to public transportation. This increase in usage will further exacerbate the unsafe conditions along the bridge sidewalks and force cyclists to make the impossible choice between risking exposure to the coronavirus by riding too close to pedestrians and other cyclists and risking injury and death from riding in a motor vehicle lane with traffic. Cyclists should not have to make that choice.

Focusing specifically on the Fremont and Ballard Bridges:

- Residents of the Ballard, Fremont, Wallingford, Phinney Ridge, Greenwood, Crown Hill and other Northwest Seattle neighborhoods use these bridges to connect to cycling and walking routes south of the Ship Canal, including commuting routes to downtown Seattle and recreational routes to Discovery and Myrtle Edwards Parks
- Residents of Magnolia and Queen Anne use these bridges to access the Burke-Gilman Trail, the Ballard and Fremont business districts, and as a route to the University of Washington
- Due in large part to the need to connect to existing bike facilities at both ends of these bridges, the sidewalk on both sides of the Fremont and Ballard Bridges acts as a *de facto* two-way multi-use path for pedestrians and cyclists
- In spite of having very narrow sidewalks, the Fremont Bridge is one of the most heavily utilized bike facilities in Seattle, with well over 1.2 million bike trips recorded in 2019. Usage in 2020 prior to the “Stay at Home” order was [on track to surpass previous records](#).
- The Ballard Bridge, on the other hand, has [numerous safety and access issues for both cyclists and pedestrians](#) and is unusable by people with mobility issues

Requirements

- An ideal solution to this problem would allow for both protected and separate two-way travel by both cyclists and pedestrians of all ages, backgrounds, and abilities

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- Any solution to this problem must provide clear and intuitive connections to common routes, supplemented by painted bike crossings and wayfinding signs, otherwise cyclists will revert back to using the bridge sidewalks for two-way travel
 - Any solution that directs cyclists to ride onto the bridge deck must provide a non-slip coating or covering for the bridge grating, which can become very slippery when wet

Recommendations

To provide guidance on how best to address this problem, Ballard-Fremont and Queen Anne Greenways have collaborated on a set of recommendations that you will find outlined in more detail below.

1. **For the Fremont Bridge**, it is our assessment that the best option to deliver safe and separated travel for cyclists and pedestrians of all ages, abilities, genders, and backgrounds would be a two-way protected bike lane (PBL) in the easternmost lane combined with a southbound lane dedicated to “Transit and Bike Only” traffic
2. **For the Ballard Bridge**, we recommended constructing a two-way PBL in the westernmost travel lane, since this would allow for the best connections to existing bike facilities at the south end of the bridge.

We also strongly recommend that the approaches to both bridges be improved to safely support access by cyclists and pedestrians. As just one example, the ramp connecting the Ship Canal Trail to the Fremont Bridge has both poor sightlines and a tight hairpin turn, which combine to make this route unsafe. For additional recommendations for addressing mobility and safety issues on and around the Fremont Bridge, see Ballard-Fremont Greenway’s [Fremont Bridge Recommendations](#). For the Ballard Bridge, see Cascade’s [Missed Connection: Ballard Bridge Safety Recommendations](#).

In addition, if congestion along the Burke-Gilman Trail continues to pose a health and safety risk, it would be beneficial to provide a parallel alternative to the Burke-Gilman trail through Fremont and Wallingford, connecting the Ballard, Fremont, and University Bridges. As more workers resume commuting by bike, this route would allow for more space and

address pedestrians' concerns over being passed by cyclists on multi-use trails. We have outlined a possible solution in **Appendix: An Alternative to the Burke-Gilman Trail**.

See Also

- [Missed Connection: Ballard Bridge Safety Recommendations](#)
- [SDOT N 34th St Mobility Improvements](#)
- [Fremont Bridge Recommendations](#)
- [N 34th St Mobility Improvements Design Feedback](#)

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Fremont Bridge

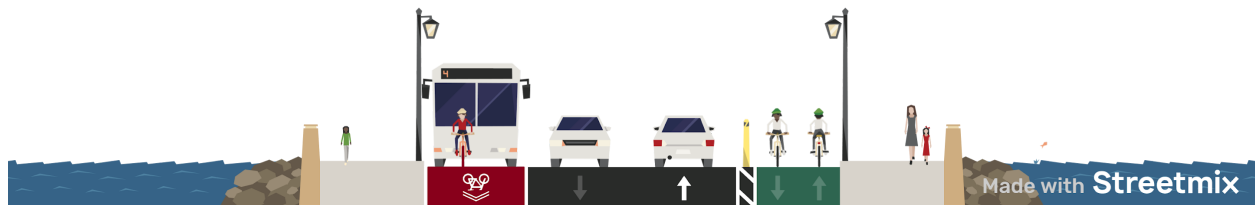
The Fremont Bridge is the lifeline for cyclists and pedestrians needing to cross the Ship Canal. As one of the most heavily used cycling facilities in the City of Seattle, the Fremont Bridge supports commuters and recreational cyclists from the Fremont, Ballard, Wallingford, Phinney Ridge, Greenwood, Crown Hill, and Queen Anne neighborhoods, as well as pedestrians traveling along the Burke-Gilman, Ship Canal, and Westlake Trails. However, due to the legacy of the bridge's original design, the narrow sidewalks are forced to act as a two-way multi-use paths, which creates unsafe conditions at the best of times. With the addition of the need to maintain a "safe social distance," the constrained sidewalk space becomes even more hazardous. Providing a dedicated two-way bike lane on the Fremont Bridge would effectively alleviate these hazards, while also providing additional capacity to support increased usage of the bridge by both pedestrians and cyclists.

Preferred Design Option #1: Two-way Protected Bike Lane with a Southbound Transit Only Lane

The best option to provide safe and separated travel for cyclists and pedestrians of all ages, abilities, genders, and backgrounds would be a two-way PBL in the easternmost lane with a southbound lane dedicated to "Transit and Bike Only" traffic:

- A two-way PBL would provide a safe channel connecting cyclists of all abilities to the Burke-Gilman, Ship Canal, and Westlake Trails, as well as the forthcoming PBLs on N 34th St
- A southbound "Transit and Bike Only" lane would provide a route for the more experienced cyclists riding up the hill on the Dexter Ave bike lane
- The "Transit and Bike Only" lane would provide an efficient channel for bus lines traveling in the direction of downtown Seattle, including the Route 40
- The negative impact on transit and freight is less than options with two separate PBLs

Fremont Bridge N Two-Way PBL & Bus/Bike O...



Design Features: Two-way Protected Bike Lane with a Southbound Transit and Bike Only Lane

This solution would be implemented as follows:

- Two-way protected bike lane from the “Westlake Ave N & Westlake Alley” bus stop to N 34th St, in place of the current rightmost northbound traffic lane, providing a straightforward continuation of the Westlake Trail into Fremont as well as a connection to the Ship Canal Trail
- Southbound Transit and Bike Only lane from N 35th St to Nickerson St, in place of the current rightmost southbound traffic lane, providing an alternative route for southbound cyclists continuing on Dexter, Nickerson, or Florentia
- Painted bike crossings in the Westlake/Dexter/Nickerson/4th intersection to indicate routes between the two-way protected bike lane and Nickerson or Dexter
- Southeast-bound bike lane on Nickerson from the Etruria-Florentia alley to Dexter, in place of the current rightmost left turn lane (center of three southeast-bound lanes), providing a route from Florentia and Nickerson to the two-way PBL
- Northwest-bound bike lane on Nickerson from 4th to Florentia/3rd, using roadway width left over from the preceding conversion, providing a route from the two-way PBL to Florentia and Nickerson

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- Short northbound bike lane on Dexter just before Westlake, replacing the straight-through function (but not the right-turn function) of the current rightmost lane.

Why Put the Two-way PBL in a Northbound Lane of the Fremont Bridge?

Based on bike counter data for the Fremont Bridge, which indicates that the regular peak commuting hours are along the west sidewalk during the morning, it is reasonable to ask: why would we recommend placing the two-way PBL on the opposite side of the bridge? Our recommendation in this case is based on an evaluation of the different types of bike riders supported by the various routes connecting to the Fremont Bridge. In our estimation, a two-way PBL along the east side of the Fremont Bridge allows for a safe, protected channel for cyclists of all ages and abilities connecting to the Burke-Gilman and Westlake Trails (which are favored by less intrepid and younger riders), while the southbound “transit and bike only” lane would provide a direct channel for the more experienced and fit cyclists heading up the hill on Dexter Ave. More specifically:

1. Southbound cyclists who currently ride on the west sidewalk of the Fremont Bridge

- a. Those cyclists who cross at the Nickerson/Westlake to access the Westlake Trail would just cross at N 34th and use the two-way PBL to connect to the Westlake Trail
- b. Similarly, those headed westbound on the Ship Canal Trail can cross to the two-way PBL at N 34th St and then loop under the bridge via the driveway access to the Ship Canal Trail on Westlake Ave
- c. The cyclists who are headed up Dexter Ave on an unprotected bike lane are typically more experienced and stronger and will be more comfortable with using the “bike and transit only” lane

2. Northbound cyclists who currently ride on the west sidewalk

- a. Cyclists approaching the Fremont Bridge via Florentia St (either from the Ship Canal Trail or from Queen Anne) with the intent of heading north along the west sidewalk are typically connecting to the Burke-Gilman Trail or N 34th St
- b. These cyclists have the option of either:

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- i. Heading under the Fremont Bridge on the Ship Canal Trail and up the driveway ramp to the east side of the Fremont Bridge
 - ii. Crossing Fremont Ave at the intersection with Nickerson St/Westlake Ave to connect to the two-way PBL

3. Southbound cyclists who currently ride on the east sidewalk

- a. Based on counts conducted by Ballard-Fremont Greenways in the fall of 2019, during peak morning hours anywhere from 250-300 cyclists (roughly 70%) ride *south* along the east sidewalk of the Fremont Bridge to access the Westlake Trail
- b. Since these riders typically approach the bridge via westbound N 34th St, they would connect directly to the two-way PBL from N 34th St at the intersection with Fremont Ave N

4. Northbound cyclists who current ride on the east sidewalk

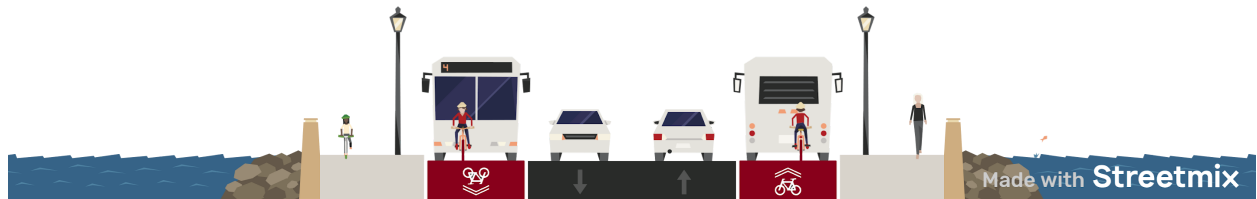
- a. Cyclists heading north from Dexter Ave or who are coming up the long sidewalk ramp from the Westlake Trail will access the two-way PBL directly at the south end of the Fremont Bridge

Design Option #2: Transit and Bike Only Lanes

While we strongly prefer Option #1, as it provides protected facilities for pedestrians and cyclists of all ages and abilities, a reasonable option to provide safe and separated travel for key alternative modes of transportation (cycling, walking, and transit), while also supporting the transfer of goods (i.e. freight) would be “transit and bike only” lanes:

- More experienced cyclists would share a lane with buses, which would provide passable connections to existing bike facilities
- Efficiency of travel for both north- and southbound transit would be improved
- Motor vehicles and freight would be relegated to two lanes
- The only protected option for less experienced cyclists would be the bridge sidewalks
- Unfortunately, there is also the very real risk with this option that motor vehicle drivers would disregard the “transit and bike” only designation and create unsafe conditions for cyclists by driving in the restricted lane

Fremont Bridge Northbound Bus and Bike Onl...

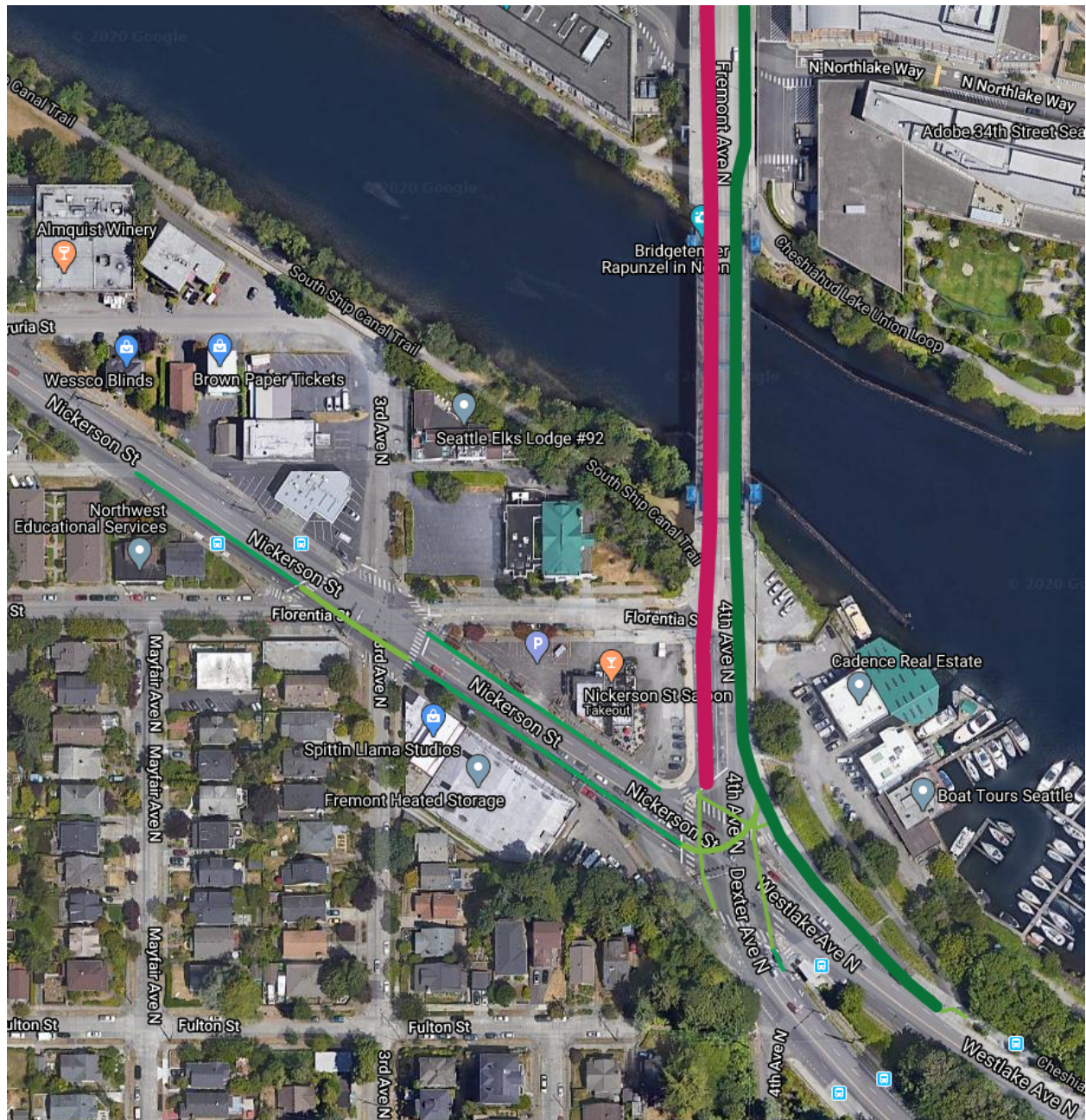


Design Features: Transit and Bike Only Lanes

This solution would be implemented as follows:

- Northbound Transit and Bike Only lane from the “Westlake Ave N & Westlake Alley” bus stop to N 35th St, in place of the current rightmost northbound traffic lane
- Southbound Transit and Bike Only lane from N 35th St to Nickerson St, in place of the current rightmost southbound traffic lane
- Short northbound bike lane on Dexter just before Westlake, replacing the straight-through function (but not the right-turn function) of the current rightmost lane.
- Painted bike crossings in the Westlake/Dexter/Nickerson/4th intersection to indicate routes:
 - From the southbound Transit and Bike Only lane to the Westlake Trail via the north crosswalk
 - From the southbound Transit and Bike Only lane to Dexter Ave N
 - From Dexter Ave N to the northbound Transit and Bike Only lane
- Short northbound bike lane on Dexter just before Westlake, replacing the straight-through function (but not the right-turn function) of the current rightmost lane.

Map of preferred design options



Southside of Fremont Bridge

To help illustrate these options, we have created an interactive [map of our Fremont Bridge recommendations](#) that allows selecting of the different options, including “East two-way PBL” or “Transit and Bike Only Lanes.”

Additional Design Options

We evaluated six design options, including the current bridge configuration.

Comparison of design options

Feature	Current	Transit & Bike Only Lanes	One-way PBLs	Two Two-way PBLs	Two-way PBL West	Two-way PBL East
Protected travel for pedestrians						
Protected travel for bikes						
Separated facilities for peds and bikes						
Separated facilities for two-way bike traffic						
Connection to existing bike trails and lanes						
Cost and complexity	N/A					
Transit capacity						
Freight capacity						
Motor vehicle capacity						

Note

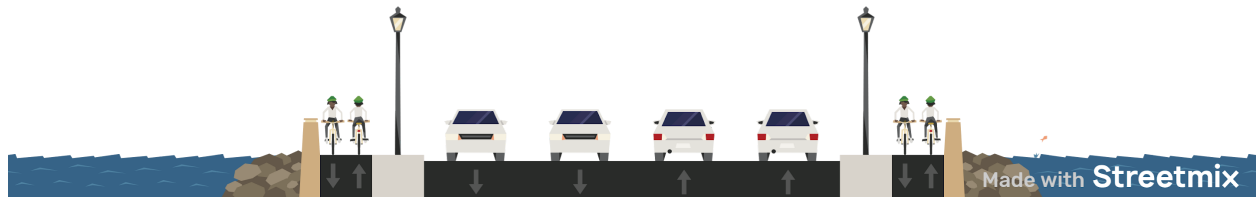
- The current bridge facilities only provide **good** connections to existing bike trails and lanes when bicycle traffic flows in both directions along the sidewalk. With single direction bicycle traffic, the connections are less ideal.
- Combining a single two-way PBL with a “Transit and Bike Only” Lane would make these options **good** for **Connection to existing bike trails and lanes**.
- If our recommendations for additional painted crossings and wayfinding signs are addressed (see the map), the “Transit and Bike Only Lanes” option would trend toward a **good** solution for **Connection to existing bike trails and lanes**.

Cross sections of options under consideration

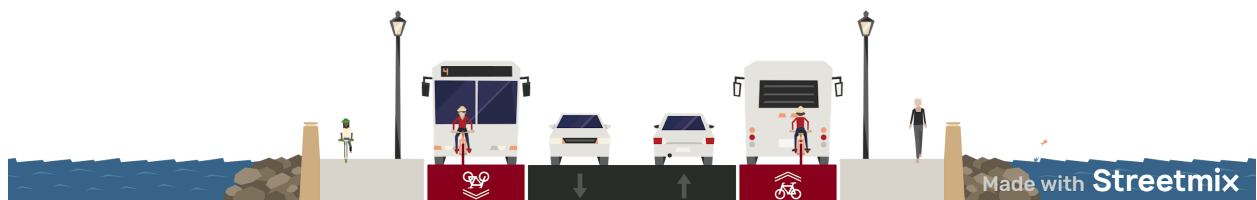
Note

1. Based on the NACTO “Urban Bikeway Design Guide,” Two-way PBLs can use 4’ lanes under constrained conditions
2. As a result, both the One-way and two Two-way PBLs result in similar loss of lanes to motor vehicle and bus traffic
3. A bus-only lane has been added to the single Two-way PBL options as a consideration to optimize transit in one direction and to provide an option for “Transit and Bike Only” travel

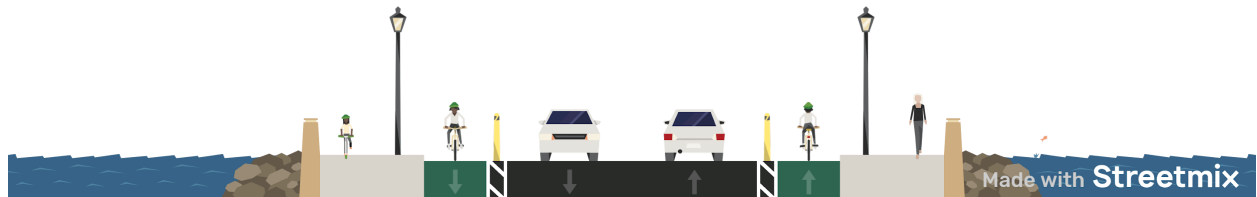
Fremont Bridge Northbound Current



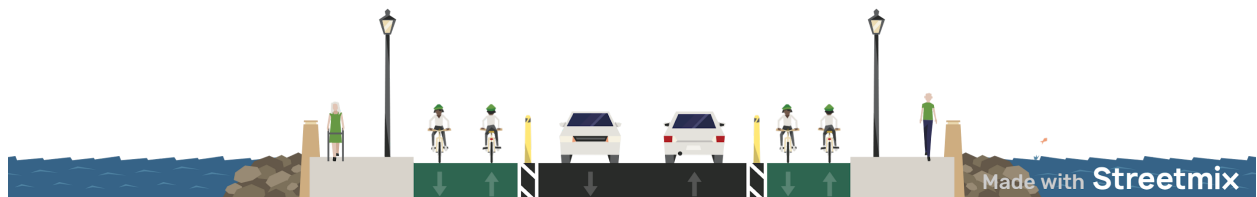
Fremont Bridge Northbound Bus and Bike Onl...



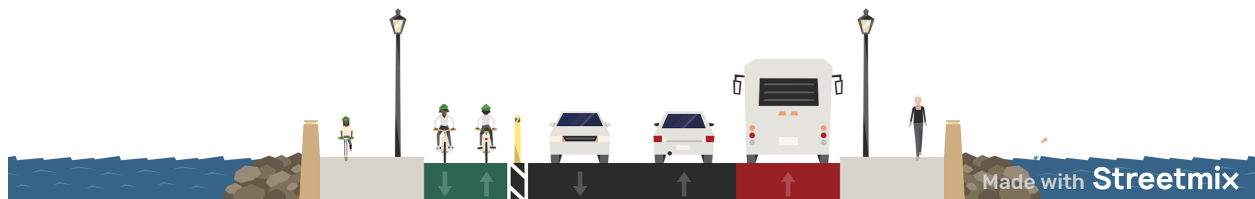
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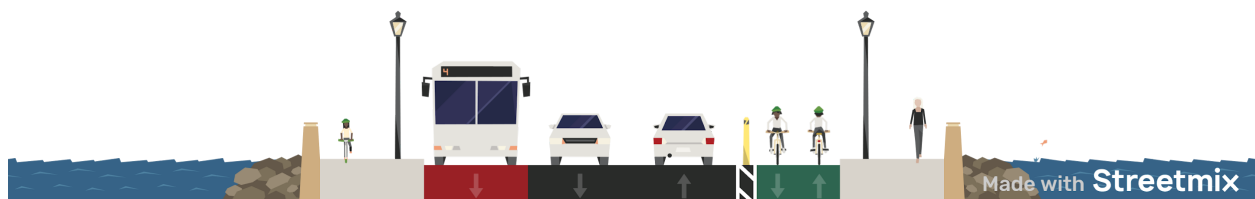
Fremont Bridge Northbound Two Two-Way PB...



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Fremont Bridge Northbound Two-way PBL Eas...



Design Notes

- An unfortunate consequence of these changes is that they would render the Fremont Bridge bicycle counter inaccurate, since bike traffic on the bridge deck would not be counted

Ballard Bridge

The Ballard Bridge is a barrier to cyclists and pedestrians--an insurmountable one for people with mobility issues--yet it also represents a longstanding opportunity to connect cycling and walking routes between the Ballard, Queen Anne, Magnolia, and Interbay neighborhoods that are currently blocked by the [numerous safety and access issues experienced by cyclists and pedestrians](#) when attempting to cross the Ballard Bridge. With the closure of the crossing at the Ballard Locks due to the COVID-19 crisis, **the Ballard Bridge is the only crossing of the Ship Canal within a convenient travel distance** for cyclists and pedestrians in Magnolia and Ballard. Improving the Ballard Bridge in the short term has the potential to open up commuting routes to downtown via the Ship Canal Trail and the newly expanded Elliott Bay Trail, as well as recreational routes to Discovery and Myrtle Edward Parks. Improving the Ballard Bridge for cyclists and pedestrians would also expand options for people living south of the Ship Canal to access the Ballard business district.

Preferred Design Option: Two-way Protected Bike Lane

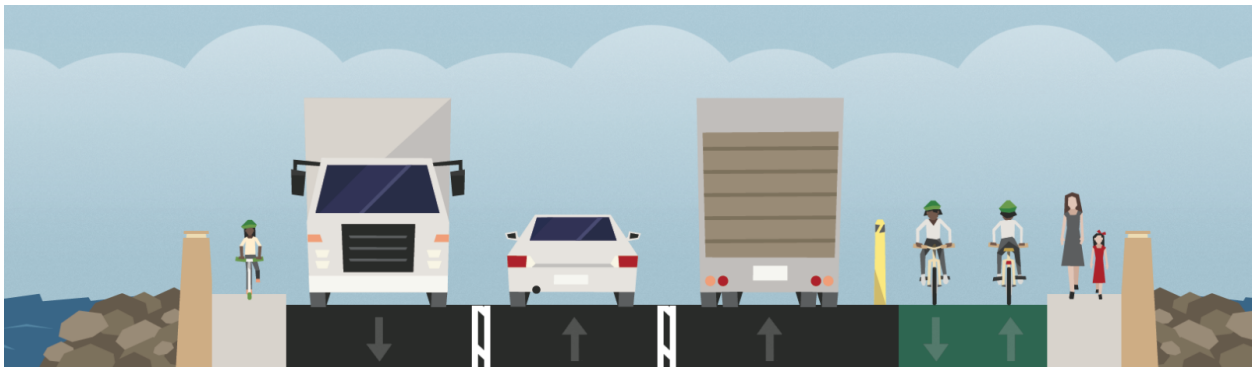
Using the westernmost vehicle lane on the Ballard Bridge for a two-way protected bike lane would connect Ballard and the Burke-Gilman Trail with the Ship Canal Trail and the Nickerson bike lane:

- The two-way bike lane would start at NW Ballard Way, which would be closed as an onramp
- The bike lane would terminate on W Emerson St at 18th Ave W (or wherever there is a curb cut to provide northbound access from the Ship Canal Trail)
- Cyclists can head eastbound on the Ship Canal trail at 18th Ave W via the sidewalk and the trail that goes under the bridge
- Cyclists can cross to the Emerson Street Bike Trail via the signal at 19th Ave W or continue on west on W Emerson St
- A bike turn box at 19th Ave W would improve safety for cyclists crossing to the Emerson Street Bike Trail

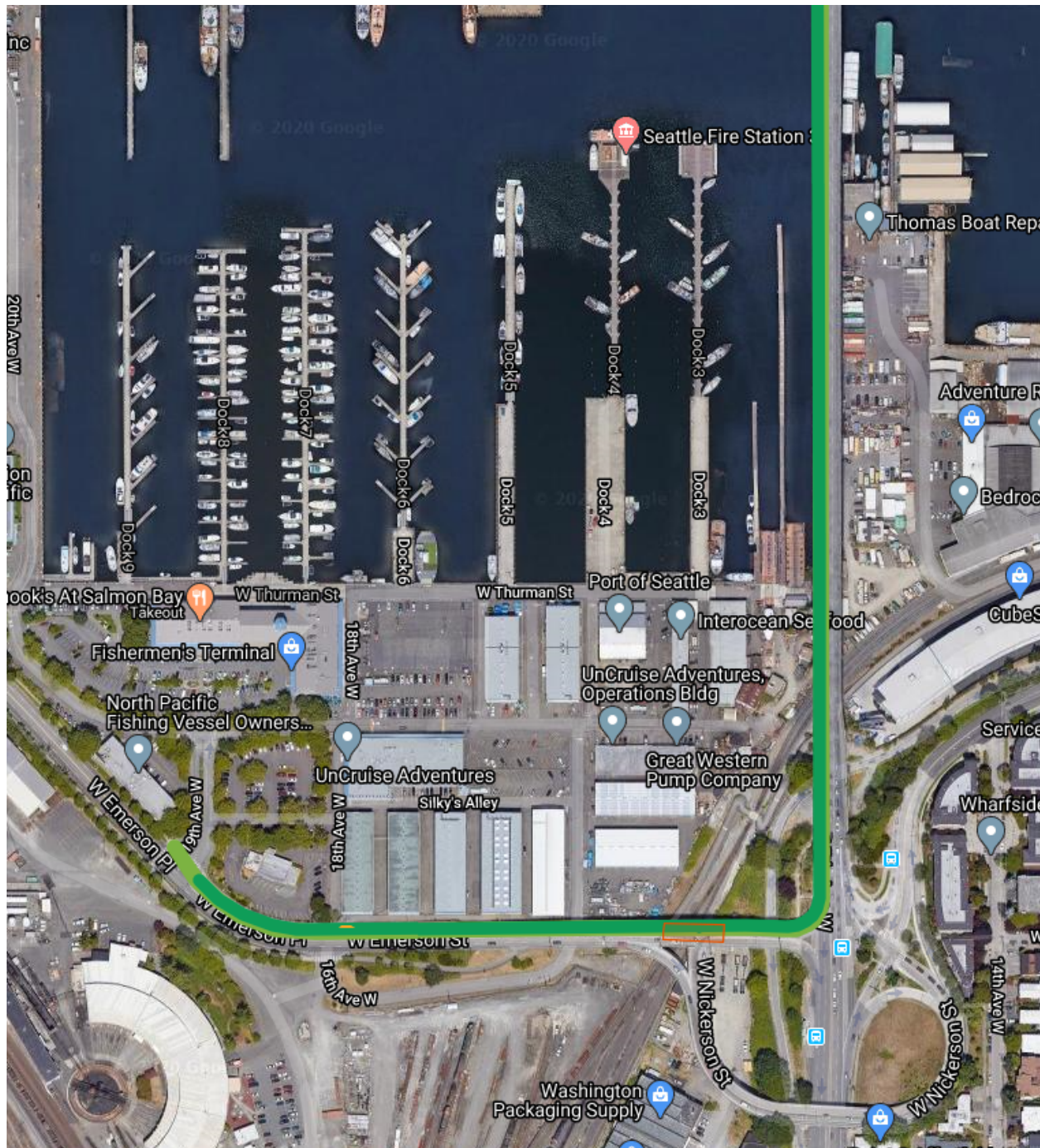
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- Cyclists would access the bike lane along W Nickerson via the overpass, which already has sharrows. It would be helpful to paint the crossing of Emerson from the two-way bike lane
 - To aid with access to Nickerson via the overpass, the gap in the turn lanes should become a turn box for bikes.

Cross section of the Ballard Bridge protected bike lane

South-facing cross section:



Map of the Ballard Bridge protected bike lane



Southside of Ballard Bridge

We have produced an [interactive map of a Ballard Bridge bike lane](#) that includes overlays of the common route connections for cyclists.

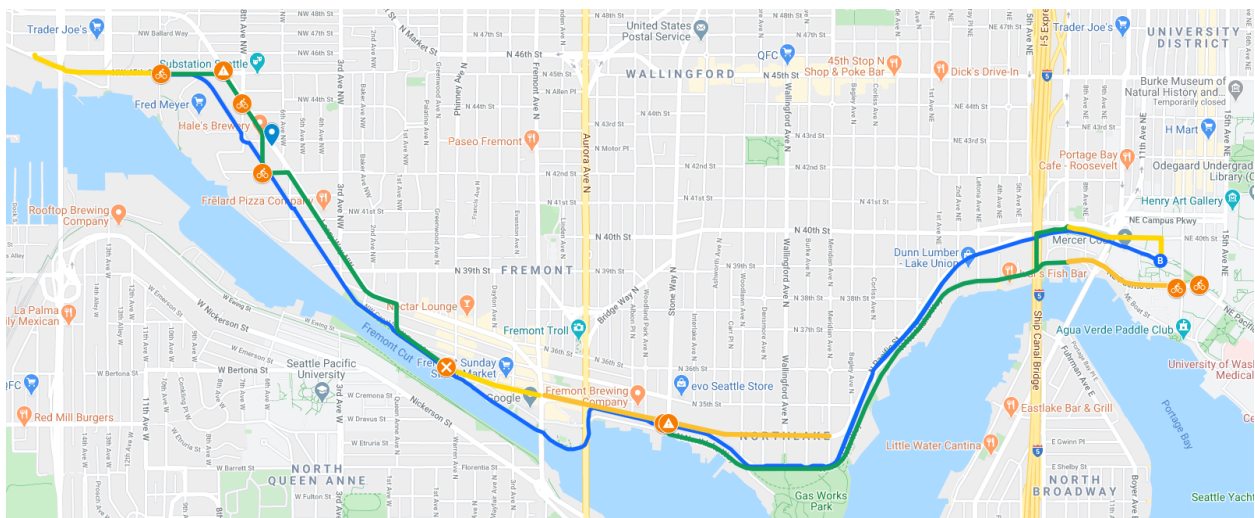
Note

- Since the bike route under the bridge to the Ship Canal Trail is somewhat obscured on the map, there are layers on the map outlining this connections
- In the map, the bike turn box and a curb cut connecting to the spur of the Ship Canal Trail are called out
- There's also a box around the major problem area on Emerson where the travel lanes get constrained by the turn lane

Appendix: An Alternative to the Burke-Gilman Trail

While the bridges are an area of ongoing concern, crowding on the Burke-Gilman Trail presents a number of safety issues to both cyclists and pedestrians. While we completely agree with Cascade’s recommendation that “experienced cyclists strongly consider biking on streets instead of trails,” it is an unfortunate reality that biking between Ballard and Fremont is extremely difficult to do safely without using the Burke-Gilman Trail. Should congestion on the Burke-Gilman Trail continue to pose a health and safety problem, it would be beneficial to provide a parallel alternative to the Burke-Gilman trail through Fremont and Wallingford, connecting the Ballard, Fremont, and University Bridges. As more workers resume commuting by bike, this route would provide more space and address pedestrians' concerns over being passed by cyclists on multi-use trails.

Map of the proposed alternative bike route



To view the proposed route in more detail, please see our [interactive map](#).

Design features: Burke-Gilman alternative

Implementation would entail converting 3 miles of traffic lanes to two-way protected bike lanes (using jersey barriers or similar) in two segments: a western segment along Leary Way NW and an eastern segment along N Northlake Way.

Leary segment benefits

- Alternative route between Ballard and the Fremont Bridge through an area with no other safe and reasonably flat bike route
- Connects to existing two-way PBLs on NW 45th St and N 34th St
- Leaves four lanes on Leary Way NW still available for other traffic

Leary segment caveats

- Pedestrian traffic on the Burke-Gilman Trail is relatively low along this segment
- A potential safe bike route across the Ballard Bridge would reduce travel demand to and from the Fremont Bridge
- Conflict with transit (southbound routes 40 and 28X) - the map shows one potential mitigation

Northlake segment benefits

- Alternative to one of the busiest segments of the Burke-Gilman Trail
- Connects to existing bike lanes on N 34th St and NE Pacific St

Northlake segment caveats

- Leaves only one lane on N Northlake Way (a minor freight route), so other traffic would have to be restricted to one-way
- A 0.6-mile portion of this segment of the Burke-Gilman Trail is already divided between cyclist and pedestrian routes
- Larger elevation difference with the University Bridge as compared to the Burke-Gilman Trail - the map shows an additional connector