

BURKE-GILMAN TRAIL MISSING LINK PROJECT



Draft Environmental Impact Statement Executive Summary

June 2016





EXECUTIVE SUMMARY

Introduction

The Burke-Gilman Trail (BGT) is a regional trail that runs east from Golden Gardens Park in Seattle and connects to the Sammamish River Trail in Bothell, except for a missing segment through the Ballard neighborhood. Currently, the regional trail ends at 30th Ave NW by the Hiram M. Chittenden (Ballard) Locks on the west, and begins again at the intersection of 11th Ave NW and NW 45th St on the east. The Seattle Department of Transportation (SDOT) proposes to connect these two segments of the BGT with a marked, dedicated route that would serve all users of the multi-use trail. The proposed project to complete the regional facility is referred to as the Missing Link.

Completing this section of the BGT has been discussed since the late 1980s. Refer to Chapter 1 in this Draft Environmental Impact Statement (DEIS) for a detailed summary of the project history. The alternatives evaluated in this DEIS were developed from suggestions received in 2013 during scoping for this DEIS. Suggested routes were evaluated using the following screening criteria: directness of route, number and types of trail crossings (i.e., driveways and intersections), street and arterial classification, adjacent land uses, and right-of-way width.

No Build Alternative

Under the No Build Alternative, no new multi-use trail would be constructed to connect the existing segments of the regional Burke-Gilman Trail. Trail users would continue to use the existing surface streets and sidewalks to travel between the existing trail segments, a distance of approximately 1.2 miles. Currently, trail users tend to use the most direct route, which is along Shilshole Ave NW. Pedestrians may opt for a street with sidewalks such as Ballard Ave NW or NW Leary Way. The No Build Alternative serves as the baseline condition, against which the Build Alternatives are compared over time to their 2040 design year. Over that time period, population and employment growth is expected to continue in the Ballard neighborhood, leading to an increase in traffic congestion, parking demand, and the number of people walking and biking.

Build Alternatives

Four Build Alternatives are analyzed in this DEIS: the Shilshole South, Shilshole North, Ballard Avenue, and Leary Alternatives. The alternatives described below are conceptual routes designed to provide distinct alternatives for analysis in the DEIS. The route that is eventually selected as the preferred alternative could be any one of these routes, or a combination of portions of any of them.

Shilshole South Alternative

Under the Shilshole South Alternative, the multi-use trail would be primarily routed along the south side of Shilshole Ave NW (Figure ES-1). There would be changes to parking, lanes, and intersection configurations on both sides of the street along this alternative alignment. The trail would accommodate users on a newly paved surface for most of its length.



Figure ES-1. Proposed Alternatives

Beginning at the existing western trail end at the Ballard Locks, the trail would continue east along the north side of the unimproved NW 54th St right-of-way until the intersection with Shilshole Ave NW, just east of 24th Ave NW. The trail would then proceed along the south side of Shilshole Ave NW, continuing onto the south side of NW 45th St to the eastern project end at 11th Ave NW.

From the existing western trail end at the Ballard Locks, the trail would be north of the Ballard Terminal Railroad (BTR) tracks until just before 17th Ave NW, at which point the trail would cross to the south of the tracks. A signal would be installed at the intersection of Shilshole Ave NW and 17th Ave NW for trail users crossing Shilshole Ave NW to access 17th Ave NW.

The trail width would vary throughout the corridor due to existing conditions and constraints, but would generally be between 8 and 12 feet wide. Based on the design concepts, the typical right-of-way on Shilshole Ave NW for this alternative would include a buffer zone adjacent to the railroad tracks and vehicle traffic lanes, a multi-use trail, two vehicle travel lanes, and preservation of parking areas where feasible.

Shilshole North Alternative

Under the Shilshole North Alternative, the multi-use trail would be primarily routed along the north side of Shilshole Ave NW (Figure ES-1). Beginning at the existing western trail end at the Ballard Locks, the trail would continue east along the south side of NW 54th St until it turns into NW Market St. The trail would continue along the south side of NW Market St, until it crosses 24th Ave NW and turns south on the east side of 24th Ave NW. The trail would then proceed east along the north side of Shilshole Ave NW to the intersection with NW 46th St. A signal would be installed at the intersection of Shilshole Ave NW and 17th Ave NW for trail users crossing 17th Ave NW. It would continue along the north side of NW 46th St underneath the Ballard Bridge to 11th Ave NW. At this point, the trail would turn south along the east side of 11th Ave NW until it connects to the eastern end of the trail at NW 45th St.

There would be changes to parking, vehicle travel lanes, and intersection configurations on both sides of the street in this alternative. The typical right-of-way section on NW Market St would include a sidewalk, the multi-use trail, a buffer zone, two vehicle travel lanes, center turn lane, and parallel parking areas on both sides of the street. The typical right-of-way on Shilshole Ave NW for this alternative would include a buffer zone and informal parking adjacent to the railroad tracks, two vehicle travel lanes, parallel parking area, buffer area, multi-use trail, and sidewalk. The existing gravel shoulder on the south side of Shilshole Ave NW would be maintained. These elements would vary along the trail due to the existing road configuration and structures.

Ballard Avenue Alternative

Under the Ballard Avenue Alternative, the multi-use trail would be primarily routed along the south side of Ballard Ave NW (Figure ES-1). Beginning at the existing western trail end at the Ballard Locks, the trail would continue east along the north side of the unimproved NW 54th St right-of-way until 28th Ave NW. At this point the trail would turn north along the east side of 28th Ave NW until it reaches NW 56th St. The trail would then turn east along the south side of NW 56th St to the intersection with 22nd Ave NW. At 24th Ave NW and NW 56th St, a new pedestrian-activated signal would be installed to facilitate the trail crossing of 24th Ave NW. The trail would turn south along the west side of 22nd Ave NW, cross NW Market St, and proceed south to Ballard Ave NW. At this point the trail would turn southeast along the south side of Ballard Ave NW and continue east on the south side of NW Ballard Way to the intersection with 15th Ave NW. The trail would then turn south onto the one-way road on the west side of 15th Ave NW, which could potentially be converted to trail-only use (no motor vehicles). The trail would

cross to the south side of NW 46th St at a newly signalized intersection and proceed east across 11th Ave NW. It would then turn south along the east side of 11th Ave NW to the eastern trail end at NW 45th St.

There would be changes to parking and vehicle travel lane configurations on all streets traversed by this alternative. The typical right-of-way section on Ballard Ave NW would include pedestrian sidewalks on both sides of the street, buffer zone, two vehicle travel lanes, and a parallel parking area on the north side of the street. These elements would vary along the trail due to the existing road configurations and structures.

Leary Alternative

Under the Leary Alternative, the multi-use trail would be primarily routed along the south side of Leary Ave NW (Figure ES-1). Beginning at the existing western trail end at the Ballard Locks, the trail would continue east along the south side of NW 54th St until it turns into NW Market St. The trail would continue east along the south side of NW Market St, crossing 22nd Ave NW. At 22nd Ave NW, the trail would turn southeast on the south side of Leary Ave NW. The trail would continue east along the south side of Leary Ave NW, which becomes NW Leary Way, to 11th Ave NW. At this point, the trail would turn south along the east side of 11th Ave NW to the current trail end at NW 45th St.

There would be changes to parking, vehicle travel lanes, and intersection configurations on both sides of the street along this alternative. The typical right-of-way on Leary Ave NW would include buffer zones on both sides of the street, a multi-use trail, parking areas on both sides of the street, sidewalks on both sides of the street, two vehicle travel lanes, and one two-way center left turn lane. The typical right-of-way on NW Market St would include a sidewalk, the multi-use trail, a buffer zone, two vehicle travel lanes, center turn lane, and parking areas on both sides of the street. These elements would vary along the trail due to the existing road configuration and structures.

Connector Segments

As mentioned previously, there are a number of possibilities to configure the routes, and six segments have been identified as the most likely connectors (Figure ES-1). These segments may be used as connections between portions of the previously identified alternative routes and could be on either side of the road. The connector segments include the following:

- Ballard Avenue NW;
- NW Vernon Place;
- 20th Avenue NW;
- 17th Avenue NW;
- 15th Avenue NW; and
- 14th Avenue NW.

Should NW Vernon Pl be used as a connector segment, a signal at NW Vernon Pl and Shilshole Ave NW may also be warranted, depending on whether the trail would continue on the north or south side of Shilshole Ave NW.

Features Common to All Build Alternatives

Roadway Design Considerations

Roadway designs would vary for each alternative based on factors such as intersection geometry, vehicle volumes, and types of vehicles. This section describes roadway modifications, intersection treatments, driveway design, and parking lot changes that could be incorporated during the final design phase of the project to address safety, access, nonmotorized users, and vehicle types. Similar concepts can be found throughout the city and in design documents such as the Urban Bikeway Design Guide (National Association of City Transportation Officials [NACTO], 2015) and Guide for Development of Bicycle Facilities (American Association of State Highway and Transportation Officials [AASHTO], 2012). These features are common to all Build Alternatives, but the location and other specifics would vary by alternative.

Roadway Design

Adding a trail to the existing street system would require roadway modifications for vehicles to co-exist with nonmotorized users. These changes could include geometric changes to create perpendicular intersections, changes to roadway lane configurations, alterations of curb radii, and design details that provide sight lines between vehicles and nonmotorized users.

Intersection Design

Intersections would be designed to more clearly identify crossings of the multi-use trail. These improvements could include the following:

- Curb extensions or curb bulbs;
- Pavement markings;
- Raised crosswalks;
- Driveway-style entrances at intersections;
- Signalized intersections;
- Rapid flashing beacons at road crossings of the trail;
- Medians used either to improve the street crossing for pedestrians or to restrict left turns across the trail;
- Barriers, fences, or buffers separating nonmotorized trail users from moving vehicular traffic or the railroad; and
- Alternative pavement treatments.

Driveway Design

Driveways that cross or intersect with the multi-use trail would also be evaluated for possible design changes. Design changes could include many of the intersection elements described above, including curb bulbs, and pavement markings and treatments. Driveways and loading docks would be reconfigured so that parked vehicles or trucks would not block the trail. Some driveways may be eliminated, relocated, or consolidated where there are multiple driveways at a single property.

Access Modifications

Some private lots may be affected where vehicle parking currently extends into the public right-of-way, or due to changes to property access from the multi-use trail. For example, striping in parking lots may be modified to prevent vehicles from parking in the right-of-way and blocking the trail, which may reduce the number of parking spaces in some lots.

Construction Activities and Durations

Overall construction of any of the Build Alternatives would last 12 to 18 months. Duration would vary depending on the extent of utility relocations, storm drainage improvements, and existing roadway reconfigurations, including bus stop relocations. Construction would likely occur in segments, and one segment would be completed before moving on to the next segment to minimize the construction duration at any given location.

Construction of any of the Build Alternatives would consist of the following general activities:

- Demolition, including removal of pavement, curbs, sidewalks, driveways, trees, signs, bus shelters, fencing, or other features located in the new trail area.
- Construction of new roadway elements, including pavement, curbs and gutters, sidewalks, driveways, trees, bus shelters, fencing, signs, and buffer elements. Buffer elements include such things as paving, landscaping, barriers, fencing, and signage.
- Utility relocations, ranging from moving fire hydrants, stormwater catch basins, and overhead utility and power poles to the installation of new drainage facilities.

Construction Staging

Construction staging and scheduling are typically determined by the contractor; however, the City would specify some mandatory restrictions for the contractor. Demolition would likely be limited to a certain length of the trail; as such, the contractor would not be allowed to demolish the work space along the entire length of the trail. Rather, the project would be constructed in multiple smaller segments.

The project would generally use areas within or near the project footprint for construction staging and storing materials and equipment, including vacant lots, parking lots, and unused rights-of-way. Temporary construction offices (such as trailers) could also use these areas. Alternatively, construction offices may be located in a rented office space. All staging areas would be restored to their pre-construction condition or better.

Construction Traffic and Haul Routes

Construction would generate traffic to transport materials and equipment to the work site and to remove demolition debris and excess soil. The contractor would require access to the site for heavy vehicles such as dump trucks and concrete trucks, light vehicles such as pickup trucks, and heavy equipment such as excavators and compactors. Trucks would transport construction material. The contractor would determine the best construction methods, as permitted by the City and in conformance with the project construction plans and specifications. The exact number of truck trips per day during construction cannot yet be determined because project design is not yet complete. However, preliminary estimates indicate that the highest number would be approximately 20 round-trip truck trips per work day during a paving operation, spread uniformly throughout the day. City streets that could be used as haul routes include Shilshole Ave NW, NW 46th St, NW Leary Way/Leary Ave NW, and 15th Ave NW.

Summary of Impacts

Potential impacts would vary by alternative. In general, impacts are associated with construction activities and would be temporary. Long-term (operational) impacts to parking and transportation patterns are expected, but these would not be significant. Refer to the individual chapters in the DEIS for further discussion of impacts.

Table ES-1 summarizes the key construction impacts that would be similar among all Build Alternatives. The No Build Alternative is not included in this table because there would be no trail construction activities associated with it. Refer to the individual chapters in the DEIS for a more complete discussion of impacts.

Table ES-1. Construction Impacts Common to All Build Alternatives

<i>Element of the Environment</i>	<i>Potential Construction Impact</i>
Geology, Soils, and Hazardous Materials	<ul style="list-style-type: none"> • Erosion potential during construction. • Potential for encountering contaminated materials.
Fish, Wildlife, and Vegetation	<ul style="list-style-type: none"> • Potential for dust and erosion to disturb wildlife. • Potential for the removal of street trees during construction.
Land and Shoreline Use	<ul style="list-style-type: none"> • Noise, traffic, dust and debris, and sidewalk and road closures could reduce patronage for businesses that rely on auto and foot traffic. • Traffic congestion could delay the pick-up and delivery of goods. • Disruption to trail users during construction; however, nonmotorized users would generally use alternative routes.
Recreation	<ul style="list-style-type: none"> • Disruption to recreational users during construction. • Disruption to access to the parking lot and entrance of the Ballard Locks.
Utilities	<ul style="list-style-type: none"> • Potential utility disruptions during utility relocations.
Transportation	<ul style="list-style-type: none"> • Traffic congestion during the 12- to 18-month construction period. • Driveway access to properties would be maintained during construction. • Temporary, minor delays to freight traffic. • Increased delays and congestion for public transit. • Potential for increased accident frequencies in isolated locations during construction.
Parking	<ul style="list-style-type: none"> • Temporary reduction of on-street parking as construction moves along trail alignment. The amount of parking affected would vary by construction stage and street block.
Air Quality and Greenhouse Gas	<ul style="list-style-type: none"> • Increased CO2 emissions associated with construction activities.
Cultural Resources	<ul style="list-style-type: none"> • Vibration, noise, and dust from construction. • Indirect effects to historic properties due to limited access in areas of active construction. • Moderate to high probability for encountering archaeological resources.

Table ES-2 summarizes the key construction impacts that vary by alternative. Because no construction would occur under the No Build Alternative, it is not included in this table. There are no construction impacts associated with Land and Shoreline Use, so it is not included in this table. Refer to the individual chapters in the DEIS for a more complete discussion of impacts.

Table ES-2. Construction Impacts Varying by Build Alternative

<i>Element of the Environment</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
Recreation	<ul style="list-style-type: none"> • Would disrupt and displace bicyclists on Shilshole Ave NW. • May disrupt access to some street end parks; construction noise may diminish users' experience. 	<ul style="list-style-type: none"> • Similar to Shilshole South Alternative, but lesser impact to street end park users. 	<ul style="list-style-type: none"> • Audible and visible to park users at Marvin's Garden and Bergen Place, as well as visitors along historic Ballard Ave NW. • Impacts to Farmers Market. 	<ul style="list-style-type: none"> • No construction impacts.
Utilities	<ul style="list-style-type: none"> • No anticipated above-ground utility relocation. 	<ul style="list-style-type: none"> • Potential relocation of above-ground utilities. 	<ul style="list-style-type: none"> • Potential relocation of above-ground utilities. • New stormwater facilities likely needed on Ballard Ave NW. 	<ul style="list-style-type: none"> • Potential relocation of above-ground utilities.
Transportation	<ul style="list-style-type: none"> • Construction on Shilshole Ave NW would cause traffic and freight delays. 	<ul style="list-style-type: none"> • Construction on Shilshole Ave NW could cause traffic and freight delays. • Construction on NW Market St could affect public transportation. 	<ul style="list-style-type: none"> • Additional traffic and freight delays on 28th Ave NW, NW 56th St, 22nd Ave NW, and Ballard Ave NW. 	<ul style="list-style-type: none"> • Additional traffic and freight delays on 11th Ave NW. • Construction on NW Market St and Leary Ave NW could affect public transportation.
Cultural Resources	<ul style="list-style-type: none"> • Potential realignment of or alternations to the BTR. 	<ul style="list-style-type: none"> • Potential realignment of or alternations to the BTR. 	<ul style="list-style-type: none"> • Potential realignment of or alternations to the BTR. • Potential changes to features of the Landmark District, such as brick pavers, granite curbs, and hitching rings. 	<ul style="list-style-type: none"> • Potential realignment of or alternations to the BTR.

Table ES-3 summarizes the key operational impacts that would be similar among all Build Alternatives. The No Build Alternative is not included in this table. Operational impacts associated with the No Build Alternative are included in Table ES-4. Refer to the individual chapters in the DEIS for a more complete discussion of impacts.

Table ES-3. Operational Impacts Common to All Build Alternatives

<i>Element of the Environment</i>	<i>Impact</i>
Geology, Soils, and Hazardous Materials	<ul style="list-style-type: none"> • Potential liquefaction during an earthquake.
Fish, Wildlife, and Vegetation	<ul style="list-style-type: none"> • No operational impacts to fish, wildlife, or vegetation. • No changes to habitat for threatened species. • Potential disturbances to urban species from more pedestrians and bicyclists.
Land and Shoreline Use	<ul style="list-style-type: none"> • All Build Alternatives are consistent with the intent of the Growth Management Act (GMA) and several planning documents, which promote nonmotorized and multimodal transportation opportunities. • In all Build Alternatives, some portion of the trail would cross through the Ballard-Interbay Northend Manufacturing and Industrial Center (BINMIC); some adopted policies do not support locating regional trails within the BINMIC. • The trail would be adjacent to water-dependent and water-related uses.
Recreation	<ul style="list-style-type: none"> • The Missing Link would be used by many people, including bicyclists, skaters, joggers, and walkers. • Completion of the trail would improve recreational connectivity to attractions like the Ballard Locks and Golden Gardens Park. • The Missing Link would be consistent with numerous recreation plans and policies.
Transportation	<ul style="list-style-type: none"> • Vehicles blocking the trail could occasionally delay trail users (on average, 15 to 25 seconds). • Where the trail intersects driveway access locations, drivers would need to stop and check the trail for pedestrians and bicyclists, resulting in minor delays (10 to 25 seconds). • Proximity of the trail to buildings adjacent to the right-of-way would cause sight-distance concerns at certain locations. • Freight access points (driveways, loading docks, etc.) may have to be consolidated or reoriented.
Parking	<ul style="list-style-type: none"> • All of the Build Alternatives would remove some parking spaces.
Air Quality and Greenhouse Gas	<ul style="list-style-type: none"> • The Build Alternatives would generate minor increases in total emissions of PM10 and CO relative to the No Build Alternative. • Emissions would be well below applicable thresholds for all alternatives.
Cultural Resources	<ul style="list-style-type: none"> • The streetscape would change slightly, but in most areas, these changes would not alter the overall character (except within the historic district).

Table ES-4 summarizes the key operational impacts that vary by alternative. Refer to the individual chapters in the DEIS for a more complete discussion of impacts. Geology, Fish and Wildlife, Utilities, Air Quality & Greenhouse Gas, and Cultural Resource impacts are not included in this table as the differences between alternatives are minor.

Table ES-4. Operational Impacts Varying by Alternative

<i>Element of the Environment</i>	<i>No Build Alternative</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
Land and Shoreline Use	<ul style="list-style-type: none"> • Would not alter current land uses. • Inconsistent with land use plans that emphasize multimodal transportation. 	<ul style="list-style-type: none"> • Just over half of alignment is adjacent to industrial uses that depend on freight mobility. 	<ul style="list-style-type: none"> • Two-thirds of alignment is adjacent to industrial uses that depend on freight mobility. • Adjacent to highest number of uses dependent upon loading zone access. 	<ul style="list-style-type: none"> • Nearly half of alignment is adjacent to industrial uses that depend on freight mobility. 	<ul style="list-style-type: none"> • One-third of alignment is adjacent to industrial uses that depend on freight mobility.
Recreation	<ul style="list-style-type: none"> • Inconsistent with adopted plans promoting more trails. • Potential for user conflicts on public streets that lack adequate pedestrian or bicycle facilities. 	<ul style="list-style-type: none"> • Similar recreational experience to existing BGT. • Most disconnected from commercial areas of Ballard. • Crosses 4 unsignalized roadway intersections. 	<ul style="list-style-type: none"> • Similar recreational experience to existing BGT. • Crosses 14 roadway intersections, both signalized and unsignalized. 	<ul style="list-style-type: none"> • Would run through the Ballard Avenue Landmark District, which would provide a different recreational experience. • Conflicts with Farmers Market. • Increase in trail user conflicts with pedestrians along Ballard Ave NW. • Crosses 16 roadway intersections, both signalized and unsignalized. 	<ul style="list-style-type: none"> • Would run through busy commercial district, which would provide a different recreational experience. • Crosses 13 roadway intersections, both signalized and unsignalized. • Potential for increased trail user conflicts along NW Market St.

<i>Element of the Environment</i>	<i>No Build Alternative</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
Transportation	<ul style="list-style-type: none"> • 5 intersections would operate at Level of Service (LOS) E or F in 2040 due to projected traffic growth. 	<ul style="list-style-type: none"> • Crosses about 41 driveways and loading docks. • Would improve LOS at study intersections. • Has the fewest driveways with sight distance concerns. 	<ul style="list-style-type: none"> • Crosses the most (about 58) driveways and loading docks. • Would generally improve LOS at study intersections. • Potential delays for transit along NW Market St. • Has the most driveways with sight distance concerns. 	<ul style="list-style-type: none"> • Crosses about 42 driveways and loading docks. • Would generally improve LOS at study intersections. • Potential user conflicts with the Farmers Market. 	<ul style="list-style-type: none"> • Crosses fewest (about 33) driveways and loading docks. • Would generally worsen LOS at study area intersections. • Reduces the sidewalk by up to 12 feet on NW Market St (between 24th Ave NW and 22nd Ave NW). • Potential delays for transit along NW Market St and Leary Ave NW.
Parking	<ul style="list-style-type: none"> • No change to parking supply. • No changes to loading zones. 	<ul style="list-style-type: none"> • 261 on-street parking spaces removed. • No removal of designated loading zone spaces. • Some undesignated loading zone loss. 	<ul style="list-style-type: none"> • 227 on-street parking spaces removed. • Potentially remove 10 generic loading zone spaces and 14 truck-only loading zone spaces. 	<ul style="list-style-type: none"> • 198 on-street parking spaces removed. • 86 paid parking spaces removed. • Potentially remove 10 generic loading zone spaces, 2 truck-only loading zone spaces, and 2 commercial vehicle loading zone spaces. 	<ul style="list-style-type: none"> • 103 on-street parking spaces removed. • Potentially remove 8 generic loading zone spaces, 3 passenger loading zone spaces, and 4 truck-only loading zone spaces.

Summary of Mitigation Measures

Table ES-5 summarizes the mitigation measures that could be considered for all Build Alternatives. Refer to the individual chapters in the DEIS for further discussion of mitigation measures.

Table ES-5. Mitigation Measures Similar for All Build Alternatives

<i>Element of the Environment</i>	<i>Potential Mitigation Measures</i>
Geology, Soils, and Hazardous Materials	<ul style="list-style-type: none"> • Utilize construction best management practices (BMPs) as detailed in a Storm Water Pollution Prevention Plan (SWPPP) to minimize the potential for erosion. • Implement BMPs such as dedicated refueling areas, following manufacturer's specifications on hazardous materials storage and disposal, spill containment supplies, and spill response supplies to control emergency situations. • Prepare and implement a Soil Management Plan during all earthwork activities. • Stop construction activities upon discovery of potentially contaminated soils or groundwater and determine appropriate disposal in accordance with SDOT requirements. • If contamination is discovered, further earthwork activities would be conducted in accordance with a site-specific Health and Safety Plan. • Prepare a design-level geotechnical report to provide design specifications.
Fish, Wildlife, and Vegetation	<ul style="list-style-type: none"> • Where possible, avoid disturbing vegetation and wildlife habitat. • Implement construction BMPs to avoid spills, and minimize dust or erosion during the construction period. • Develop a SWPPP specifically for the project. • Protect trees during construction. Where possible, avoid removing street trees, and replace in accordance with code requirements. • Street trees may also be added in areas where there currently are no street trees.
Land and Shoreline Use	<ul style="list-style-type: none"> • Construction and staging plans could be required to minimize impacts to business and residential access, maintain traffic flow, and maintain business visibility to encourage continued patronage. Provide the public and business owners information regarding the construction schedule, hours of operation, location and duration of lane closures, and changes to parking provisions. • Time the construction and coordinate with other construction projects to minimize potential use conflicts. • Employ additional measures, such as flaggers, to minimize freight delays in areas heavily used by freight. • Maintain loading zones and access, or identify alternative loading locations to minimize impacts to uses that rely on goods deliveries and shipments.
Recreation	<ul style="list-style-type: none"> • Use construction BMPs to control fugitive dust and vehicle emissions. • Clearly mark pedestrian and bicycle access routes as well as locations of detour signage and other wayfinding elements.

<i>Element of the Environment</i>	<i>Potential Mitigation Measures</i>
Utilities	<ul style="list-style-type: none"> • Coordinate with utility providers prior to initiating construction activity. • Coordinate with property owners to obtain input on undocumented utility locations. • Notify property owners in advance of disruptions in service. • Comply with stormwater code requirements.
Transportation	<ul style="list-style-type: none"> • Develop a Traffic Control Plan to reduce impacts on traffic operations, maintain access, and protect the public during construction. • Clearly mark detours for motor vehicles to provide alternative routes. • Make accommodations for loading zone access for business deliveries, taxi and bus service, and garbage pickup. • Use flaggers, uniformed police officers, barricades, signage, or other traffic control devices. • Designate construction haul routes. • Make accommodations for oversized freight vehicles to travel through construction zones during road closures. • Publicize transit stop closures, alternative transit stop locations, and interim transit routes. • Provide emergency access through construction areas to minimize impacts on emergency response times. • Maintain rail facilities and operations to minimize impacts on freight rail service. • Business access points could be reoriented to improve safety and operations. • Design elements could improve safety in locations with sight distance concerns. • Pavement modifications could be used to identify where the trail intersects with driveways. • Trail driveway notification signage could be used to maintain safe speeds and identify trail intersections. • Driveways could be combined to reduce the number of conflict locations.
Parking	<ul style="list-style-type: none"> • Maintain parking availability to the extent feasible during construction. • Encourage the contractor's workers to find alternative parking areas or to use transit to access the work site. • Modify on-street parking policies and practices to make parking more consistently available for short-term users. • Adjust short-term parking limits to make the most efficient use of the supply of short-term parking. • Provide information on off-street parking spaces on the City's website. • Shift loading zone spaces to other locations along existing block faces, to the other side of a street, or to an adjacent block.

<i>Element of the Environment</i>	<i>Potential Mitigation Measures</i>
Air Quality and Greenhouse Gas	<ul style="list-style-type: none">• Use measures to control dust and cover haul trucks that transport soil, sand, or other loose material.• Wash construction equipment to prevent dirt from being tracked out onto public roads.• Limit vehicle speeds on unpaved roads.• Pave exposed soils in areas planned for paving as soon as possible.• Minimize vehicle and equipment idle times.• Maintain construction equipment and vehicles.• Encourage carpooling options for construction workers.• Use local building materials to reduce transport distances.
Cultural Resources	<ul style="list-style-type: none">• Minimize the removal or alteration of railroad rails, and avoid effects to other contributing features, such as switches and sleepers.• Use BMPs to control noise, air pollution, dust, and mud, and avoid damage to historic resources.

Table ES-6 summarizes the mitigation measures that could vary by alternative. Refer to the individual chapters in the DEIS for further discussion of mitigation measures. Geology, Fish and Wildlife, Land Use, Utilities, Parking, and Air Quality & Greenhouse Gas are not included in this table as the mitigation measures do not vary substantially between alternatives.

Table ES-6. Mitigation Measures Varying by Alternative

<i>Element of the Environment</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
Recreation	<ul style="list-style-type: none"> No specific mitigation measures identified. 	<ul style="list-style-type: none"> No specific mitigation measures identified. 	<ul style="list-style-type: none"> SDOT would coordinate with the Farmers Market regarding trail use through the market. 	<ul style="list-style-type: none"> No specific mitigation measures identified.
Transportation	<ul style="list-style-type: none"> BTR track relocations would be coordinated to maintain operations. 	<ul style="list-style-type: none"> No specific mitigation measures identified. 	<ul style="list-style-type: none"> No specific mitigation measures identified. 	<ul style="list-style-type: none"> To mitigate the four intersections that would experience an LOS decrease, additional right-of-way could be required. Design elements could be used to mitigate impacts along NW Market St and where the sidewalk widths would be reduced. Queue jumps (additional travel lanes for transit vehicles only) could be used to prioritize transit.
Cultural Resources	<ul style="list-style-type: none"> No specific mitigation measures identified. 	<ul style="list-style-type: none"> No specific mitigation measures identified. 	<ul style="list-style-type: none"> The design and appearance of the trail within the Landmark District should be compatible with its historic character and in accordance with Office of Historic Preservation requirements. Reuse granite curbs and reset the brick pavement. 	<ul style="list-style-type: none"> No specific mitigation measures identified.

Summary of Cumulative Impacts

Cumulative transportation-related impacts may occur as a result of overlapping construction projects in the Ballard area. Because the timing of individual projects is uncertain, the magnitude of impact is difficult to predict, but the potential exists for multiple projects to occur simultaneously.

The Leary Alternative could conflict with plans to develop a Bus Rapid Transit route on NW Leary Way/Leary Ave NW.

Next Steps

At the conclusion of the DEIS comment period, SDOT will review and respond to all oral and written comments received on the DEIS. A Final EIS (FEIS) will be prepared that responds to all comments, as well as identifies a preferred alternative. It is anticipated that the FEIS will be published in early 2017. Following publication of the FEIS, SDOT will make a final decision regarding the alternative to be constructed, mitigation measures to be incorporated into the project, and identify funding sources.