

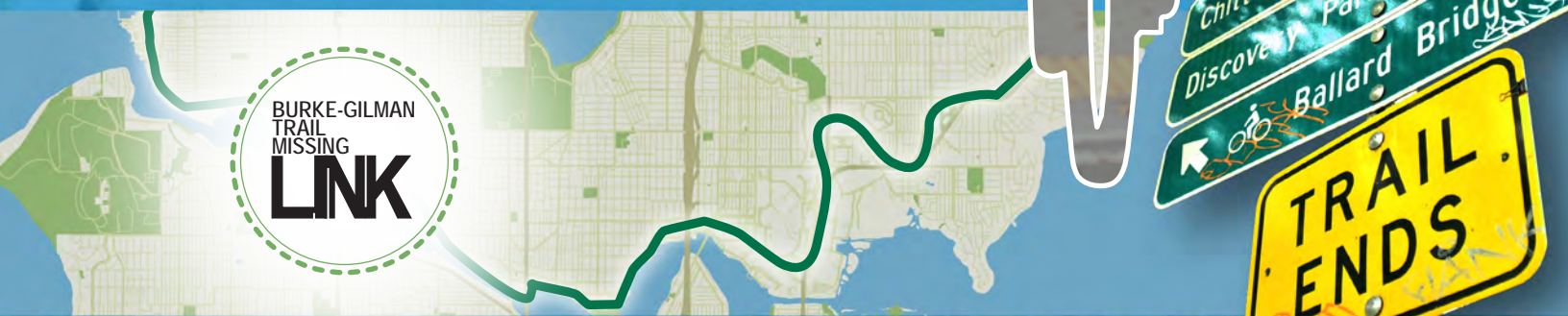
BURKE-GILMAN TRAIL MISSING LINK PROJECT



Seattle
Department of
Transportation

Final Environmental Impact Statement Executive Summary

May 2017





FACT SHEET

Project Name

Burke-Gilman Trail Missing Link Project

Proposed Action

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.

Project Proponent and SEPA Lead Agency

Seattle Department of Transportation (SDOT)

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Date of Issue of the Final Environmental Impact Statement

May 25, 2017

Document Availability and Cost

The Final Environmental Impact Statement (FEIS) is available online at:
http://www.seattle.gov/transportation/BGT_Ballard.htm.

Printed copies of the FEIS are available for review at no charge at the following locations:

Seattle Department of Construction and Inspections Public Resources Center
700 5th Ave, Suite 2000
Seattle, WA 98124

Seattle Public Library, Central Library
1000 4th Ave
Seattle, WA 98104

Ballard Library and Ballard Neighborhood Customer Service Center
5614 and 5604 22nd Ave NW
Seattle, WA 98107

Seattle Public Library, University Branch
5009 Roosevelt Way NE
Seattle, WA, 98105

Seattle Public Library, Fremont Branch
731 N 35th Street
Seattle, WA 98103

Seattle Public Library, Wallingford Branch
1501 N 45th Street
Seattle, WA 98103

Seattle Public Library, Greenwood Branch
8016 Greenwood Ave N
Seattle, WA 98103

Seattle Public Library, Magnolia Branch
2801 34th Ave W
Seattle, WA 98199

Seattle Public Library, Queen Anne Branch
400 W Garfield Street
Seattle, WA 98119

University of Washington Suzzallo Library
University of Washington Campus

Printed copies of the Executive Summary are available to the public at no charge. Printed copies of the FEIS, comment responses, and technical appendices are available for purchase by calling (206) 684-5000 or emailing BGT_MissingLink_Info@seattle.gov. Prices for printed volumes are:

FEIS (printed copy): \$50

Comments and Responses (printed copy): \$50

Technical Appendices (printed copy): \$50

Executive Summary (printed copy): Free

The Executive Summary is available in braille free of charge by contacting SDOT at (206) 684-5000.

Permits, Licenses, and Approvals Likely Required for Proposal

- State Environmental Policy Act (SEPA)
- Seattle Shoreline Master Program Review
- National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit

Authors and Contributors

A list of authors and contributors is provided in Chapter 13 of the FEIS.

Location of Background Materials

Background materials used in the preparation of this FEIS are listed in Chapter 12, References. Several documents are available online at the project website:

http://www.seattle.gov/transportation/BGT_Ballard.htm.

Environmental Review

SDOT published the DEIS on June 16, 2016. A 45-day comments period was open until August 1, 2016 and included public meetings on July 14, 2016 and July 16, 2016. Based on the analysis in the DEIS, with input from the public comments and meetings with area businesses and interest groups, SDOT developed the Preferred Alternative, which combines components previously analyzed in the Build Alternatives. Volume 2 of the FEIS contains the responses to the comments. Final design and permitting are expected to be completed by early 2018, with construction beginning shortly thereafter. The project is anticipated to be complete by 2019.



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 Final Environmental Impact Statement (FEIS) for a detailed summary of the project history. The alternatives evaluated in the FEIS were initially developed from suggestions received in 2013 during project scoping. Suggested routes were evaluated based on 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, then combined to form the four Build Alternatives discussed in the Draft EIS (DEIS). After reviewing the public comments received on the DEIS, and discussions with both internal and external experts and stakeholders, SDOT combined two of the proposed Build Alternatives to form the Preferred Alternative.

Project Objectives

The primary objective of the proposed project is to connect the roughly 1.4-mile gap between the existing segments of the BGT through the Ballard neighborhood. The project is intended to create a safe, direct, and defined multi-use trail for persons of all abilities, for a variety of transportation and recreational activities, and to improve predictability for motorized and nonmotorized users along the project alignment. Another objective of the project is to provide connections to the proposed nonmotorized networks shown in the Pedestrian Master Plan and Seattle Bicycle Master Plan, while maintaining truck and freight facilities and access that support industrial and water-dependent land uses within the shoreline district and the Ballard-Interbay Northend Manufacturing and Industrial Center (BINMIC).

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 1.4 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. Shilshole Ave NW is used by passenger vehicles in addition to large commercial vehicles and trucks traveling to the adjacent industrial areas. There are no sidewalks on the south side of the street and sporadic sidewalks on the north side of

Availability of the FEIS

The FEIS and related documents are available online at:
http://www.seattle.gov/transportation/BGT_Ballard.htm.

the street. Unregulated parking occurs on both sides of the street. The No Build Alternative serves as the baseline condition against which the Build Alternatives are compared over time to their 2040 design year. The year 2040 was used as the timeline to analyze the impacts of the project. 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

The FEIS analyzes five possible alternatives for completing the Missing Link: the Preferred, 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 FEIS.

Preferred Alternative

The Preferred Alternative (illustrated in Figure ES-1) is a combination of components of the previously analyzed Build Alternatives. Except for one minor route connection (as described below), the Preferred Alternative does not contain any route segments or components that were not analyzed in the DEIS. The Preferred Alternative is most similar to the Shilshole South Alternative, but its westernmost portion contains elements of both the Leary and Shilshole North Alternatives. The Preferred Alternative does not share any segments or components of the Ballard Avenue Alternative.

There would be changes to parking areas, travel and motor vehicle lanes, as well as intersection configurations on both sides of the streets along the Preferred Alternative. The trail would accommodate users on a newly paved, grade-separated surface for most of its length. Route specifics are described below.

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 the intersection with 24th Ave NW. Up to this point, the Preferred Alternative follows the same route as both the Shilshole North and Leary Alternatives. At the intersection of NW Market St and 24th Ave NW, the Preferred Alternative would head south on the west side of 24th Ave NW for approximately 125 feet before the intersection with the south side of Shilshole Ave NW. The Preferred Alternative would then cross 24th Ave NW and proceed along the south side of Shilshole Ave NW, continuing onto the south side of NW 45th St to 11th Ave NW, and the eastern terminus of the trail. This section of the Preferred Alternative route is identical to the Shilshole South Alternative.

From the existing western trail end at the Ballard Locks, the trail would be north of the Ballard Terminal Railroad (BTR) tracks until just past 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. The signal would facilitate nonmotorized user crossings of Shilshole Ave NW and allow for better traffic flow between Shilshole Ave NW and 17th Ave NW, which would provide a benefit to traffic mobility and trail users.

The trail width would vary somewhat throughout the corridor due to existing conditions and constraints, but would generally be between 10 and 12 feet wide. Based on the design concepts, the typical right-of-way on Shilshole Ave NW for this alternative would include a barrier or buffer zone adjacent to the railroad tracks, a multi-use trail, a barrier or buffer zone adjacent to the vehicle travel lanes, two vehicle travel lanes, and preservation or addition of parking areas where feasible (Figure ES-1). See Chapter 7, Transportation, for additional detail on this and all other Build Alternatives.

This route was addressed in the DEIS except for the approximately 125-foot section on the west side of 24th Ave NW. The west side of 24th Ave NW has better connectivity and directness of route than the east side of 24th Ave NW, which was evaluated as part of the Shilshole North Alternative.

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.

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 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 somewhat throughout the corridor due to existing conditions and constraints, but would generally be between 10 and 12 feet wide, with one short segment that narrows to 8 feet wide. Based on the design concepts, the typical right-of-way on Shilshole Ave NW for this alternative would include a barrier or buffer zone adjacent to the railroad tracks and vehicle travel lanes, a multi-use trail, two vehicle travel lanes, and preservation of parking areas where feasible. A detailed map showing this alternative was presented in the DEIS. See also Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.

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 existing trail at NW 45th St.

There would be changes to parking, vehicle travel lanes, and intersection configurations on both sides of the streets in this alternative. The typical right-of-way on NW Market St would include sidewalks on both sides of the street, the multi-use trail, a buffer zone, parallel parking or bus zone on both sides of the street, two vehicle travel lanes, and center turn lane. The typical right-of-way on Shilshole Ave NW for this alternative would include a barrier or 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. A detailed map showing this alternative was presented in the DEIS. See also Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.



Figure ES-1. Proposed Alternatives

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 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 on Ballard Ave would include pedestrian sidewalks on both sides of the street, buffer zone, two vehicle travel lanes, and 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. A detailed map showing this alternative was presented in the DEIS. See also Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.

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 length due to the existing road configuration and structures. A detailed map showing this alternative was presented in the DEIS. See also Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.

Connector Segments

As mentioned previously, there are a number of possibilities to configure the routes, and six segments were identified as the most likely connectors in the DEIS (Figure ES-1). These segments could be used as connections between portions of the previously identified alternative routes and could be on either side of the road; however, none of these connectors were selected as part of the Preferred Alternative. The connector segments included the following:

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

If NW Vernon Pl is used as a connector segment, then 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 and Safety Considerations

Although safety itself is not an element of the environment required to be analyzed under SEPA, a focus of the FEIS is the analysis of potential “traffic hazard” impacts, as well as design treatments and other measures that may be taken to mitigate those potential impacts. Regardless of any relation to SEPA, safety is a key component of this project (and all SDOT projects), and therefore is described throughout the FEIS.

The SDOT design process relies on City standards and guidelines, such as the City of Seattle’s Standard Plans for Municipal Construction and Right-of-Way Improvements Manual (SDOT, 2012), which have been developed through research and adaptation of national publications. In addition to City standards, SDOT consistently follows national guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), and Federal Highway Administration (FHWA). The final construction documents rely on a milestone schedule that allows for a thorough quality control process where the design is vetted through several SDOT divisions and City of Seattle departments, whose expertise is applicable to the project. These reviews occur at multiple checkpoints during design.

Given the City’s diverse mobility needs, which include motorized and nonmotorized users, it is common for multiple modes of transportation to interact with each other. These areas may include but are not limited to intersections, driveways, or shared roads. While these interactions may introduce potential conflicts, they are not inherently traffic hazards. Designing to increase predictability between modes of travel is a priority of any project and standard practice.

Roadway designs would vary for each alternative based on factors such as intersection geometry, vehicle volumes, nonmotorized users, and types of vehicles. This section describes roadway modifications, intersection treatments, driveway design, and parking modifications 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 (NACTO, 2015) and Guide for Development of Bicycle Facilities (AASHTO, 2012). These features are common to all Build Alternatives, but the location and other specifics would vary by alternative. Chapter 7, Transportation, provides additional detail related to these design considerations.

Roadway Design

Adding a trail to the existing street system would require roadway modifications for vehicles to co-exist with nonmotorized users. These changes would include geometric changes to create perpendicular intersections, changes to roadway lane configurations, alterations of curb radii, and design details that improve sight lines between vehicles and nonmotorized users. In addition to pavement treatments and painting elements, driveway locations, heights, and widths would also be considered for modifications.

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 and driveways;
- Driveway-style entrances at intersections;
- Signalized intersections;
- Trail crossing warnings at road crossings of the trail;
- Medians used either to improve the street crossing for pedestrians or to restrict left turns across the trail; and
- Barriers, fences, or buffers separating nonmotorized trail users from moving vehicular traffic or the railroad.

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, pavement markings, and treatments. Driveways and loading zones 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, but not be limited to, 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 could 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.
- Rail segments along Shilshole Ave NW and NW 45th St may be relocated to provide for the trail design.

Construction Staging

Construction staging and scheduling are typically determined by the contractor; however, the City of Seattle (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 associated with construction activities 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 FEIS 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 FEIS 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 carbon dioxide 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 FEIS for a more complete discussion of impacts.

Table ES-2. Construction Impacts Varying by Build Alternative

<i>Element of the Environment</i>	<i>Preferred Alternative</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"> • 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"> • Audible and visible to park users at Bergen Place.
Utilities	<ul style="list-style-type: none"> • Potential relocation of above-ground utilities. • New stormwater facilities likely needed. 	<ul style="list-style-type: none"> • No anticipated above-ground utility relocation. • New stormwater facilities likely needed. 	<ul style="list-style-type: none"> • Potential relocation of above-ground utilities. • New stormwater facilities likely needed. 	<ul style="list-style-type: none"> • Potential relocation of above-ground utilities. • New stormwater facilities likely needed. 	<ul style="list-style-type: none"> • Potential relocation of above-ground utilities. • New stormwater facilities likely needed.
Transportation	<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"> • 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 alterations to the BTR. 	<ul style="list-style-type: none"> • Potential realignment of or alterations to the BTR. 	<ul style="list-style-type: none"> • Potential alterations to the BTR. 	<ul style="list-style-type: none"> • Potential alterations 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 alterations 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 FEIS 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 Ballard Avenue and Leary Alternatives have the least length of trail in the BINMIC. • Some existing sidewalk uses within the right-of-way, including outdoor seating areas, landscaping, and signage may require modification or relocation as a result of the trail.
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 (on average, 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 zones, 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 particulate matter and carbon monoxide relative to the No Build Alternative. • Emissions would be well below applicable thresholds for all alternatives.

Table ES-4 summarizes the key operational impacts that vary by alternative. Refer to the individual chapters in the FEIS 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>Preferred 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"> • 44% of the alignment is adjacent to industrial uses. 	<ul style="list-style-type: none"> • 54% of the alignment is adjacent to industrial uses. 	<ul style="list-style-type: none"> • 41% of the alignment is adjacent to industrial uses. 	<ul style="list-style-type: none"> • 38% of the alignment is adjacent to industrial uses. 	<ul style="list-style-type: none"> • 21% of the alignment is adjacent to industrial uses.
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. • Disconnected from commercial areas of Ballard. • Would increase access to shoreline street ends. • Crosses 6 roadway intersections, both signalized and unsignalized. 	<ul style="list-style-type: none"> • Similar recreational experience to existing BGT. • Disconnected from commercial areas of Ballard. • Would increase access to shoreline street ends. • Crosses 6 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"> • Landmark District would provide a different recreational experience. • Conflicts with Farmers Market. • Increase in trail user conflicts with pedestrians along Ballard Ave NW. • Crosses 15 roadway intersections, both signalized and unsignalized. 	<ul style="list-style-type: none"> • Commercial district would provide a different recreational experience. • Crosses 17 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>Preferred 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"> 6 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 approximately 39 driveways and loading zones. Would improve LOS at study intersections. Up to 4 driveways could have sight distance concerns. Rail line would be relocated. 	<ul style="list-style-type: none"> Crosses approximately 37 driveways and loading zones. Would improve LOS at study intersections. Up to 8 driveways could have sight distance concerns. Rail line could be relocated. 	<ul style="list-style-type: none"> Crosses approximately 54 driveways and loading zones. Would improve LOS at study intersections. Potential delays for transit along NW Market St. Up to 28 driveways could have sight distance concerns. 	<ul style="list-style-type: none"> Crosses approximately 41 driveways and loading zones. Would improve LOS at study intersections. Potential user conflicts with the Farmers Market. Up to 18 driveways could have sight distance concerns. 	<ul style="list-style-type: none"> Crosses approximately 29 driveways and loading zones. Would worsen LOS at study area intersections. Reduces the sidewalk by up to 12 feet on NW Market St to provide the BGT Missing Link. Potential delays for transit along NW Market St and Leary Ave NW. Up to 17 driveways could have sight distance concerns.
Parking	<ul style="list-style-type: none"> No change to parking supply. 	<ul style="list-style-type: none"> 344 on-street parking spaces removed. 	<ul style="list-style-type: none"> 279 on-street parking spaces removed. 	<ul style="list-style-type: none"> 206 on-street parking spaces removed. 	<ul style="list-style-type: none"> 198 on-street parking spaces removed. 86 of those on-street spaces that would be removed are paid parking spaces. 	<ul style="list-style-type: none"> 82 on-street parking spaces removed.

<i>Element of the Environment</i>	<i>No Build Alternative</i>	<i>Preferred Alternative</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
<p>Loading Zones</p>	<ul style="list-style-type: none"> • No changes to loading zones. 	<ul style="list-style-type: none"> • Potentially remove or relocate 2 unrestricted loading zone spaces and 2 truck-only loading zone spaces. 	<ul style="list-style-type: none"> • No removal of designated loading zone spaces. • Some undesignated loading zone loss. 	<ul style="list-style-type: none"> • Potentially remove or relocate 10 unrestricted loading zone spaces and 14 truck-only loading zone spaces. 	<ul style="list-style-type: none"> • Potentially remove or relocate 10 unrestricted loading zone spaces, 2 truck-only loading zone spaces, and 2 commercial vehicle loading zone spaces. 	<ul style="list-style-type: none"> • Potentially remove or relocate 8 unrestricted loading zone spaces, 3 passenger loading zone spaces, and 4 truck-only loading zone spaces.

Potential Traffic Hazards by Alternative Segment

To better compare and understand the differences among the alternatives as analyzed in the DEIS, and to inform the development of the Preferred Alternative presented in the FEIS, SDOT examined the key roadway design and safety considerations described above, in particular driveways, intersections, sight line concerns, traffic/roadway changes, and nonmotorized considerations. For this new analysis, which was not presented in the DEIS, the alternative routes were grouped by broad geographical segment within the study area to reflect the broad land uses in these segments. The three segments examined are illustrated in Figure ES-2 and include the following:

- The west segment (between Ballard Locks and 24th Ave NW);
- The central segment (between 24th Ave NW and 15th Ave NW); and
- The east segment (between 15th Ave NW and 11th Ave NW).

The intent of this analysis by segment was to be able to better differentiate impacts that were not clear when evaluating the alternative route as a whole. This process allowed SDOT decision makers to make an informed decision when weighing options for selection of the Preferred Alternative. Results of the examination of potential traffic hazards by segment are summarized in Table ES-5.



Figure ES-2. West, Central, and East Segments of the Study Area

Table ES-5. Potential Traffic Hazards by Alternative Segment

<i>Element</i>	<i>Preferred Alternative</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
West Segment (between Ballard Locks and 24th Ave NW)					
Driveways	<ul style="list-style-type: none"> • Crosses about 8 driveways/loading zones along this segment • Driveways are primarily commercial/retail driveways • Driveways are organized and delineated 	<ul style="list-style-type: none"> • Crosses about 7 driveways/loading zones along this segment • Driveways are primarily industrial driveways • Driveways are organized and delineated • Large trucks backing into industrial driveways at multiple locations 	<ul style="list-style-type: none"> • Crosses about 8 driveways/loading zones along this segment • Driveways are primarily commercial/retail driveways • Driveways are organized and delineated 	<ul style="list-style-type: none"> • Crosses about 7 driveways/loading zones along this segment • Driveway are primarily residential driveways with some commercial/ retail driveways • Driveways are organized and delineated 	<ul style="list-style-type: none"> • Crosses about 8 driveways/loading zones along this segment • Driveways are primarily commercial/retail driveways • Driveways are organized and delineated
Intersections	<ul style="list-style-type: none"> • The Missing Link would cross 1 signalized intersection approach and 1 unsignalized intersection approach 	<ul style="list-style-type: none"> • The Missing Link would cross 2 unsignalized intersection approaches 	<ul style="list-style-type: none"> • The Missing Link would cross 2 signalized intersection approaches and 1 unsignalized intersection approach 	<ul style="list-style-type: none"> • The Missing Link would cross 2 signalized intersection approaches and 2 unsignalized intersection approach 	<ul style="list-style-type: none"> • The Missing Link would cross 2 signalized intersection approaches and 1 unsignalized intersection approach
Sight Line Concerns	<ul style="list-style-type: none"> • Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk 	<ul style="list-style-type: none"> • Buildings constructed up to property lines adjacent to portions of the trail • Storage of industrial materials encroaching on right-of-way on NW 54th St 	<ul style="list-style-type: none"> • Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk 	<ul style="list-style-type: none"> • Buildings set back from property lines adjacent to portions of the trail 	<ul style="list-style-type: none"> • Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk
Traffic/Roadway Changes	<ul style="list-style-type: none"> • Left-turn pocket relocated from Ballard Locks driveway to signalized intersection at 32nd Ave NW • NW 54th St/NW Market St reduced by one lane in each direction 	<ul style="list-style-type: none"> • Two-way traffic reoriented into one-way operations in narrow right-of-way along unimproved NW 54th St right-of-way • Railroad tracks along unimproved NW 54th St right-of-way may be removed or relocated to allow additional right-of-way space for the trail 	<ul style="list-style-type: none"> • NW 54th St/NW Market Street reduced by one lane in each direction 	<ul style="list-style-type: none"> • Intersection at 24th Ave NW and NW 56th St signalized 	<ul style="list-style-type: none"> • NW 54th St/NW Market St reduced by one lane in each direction

<i>Element</i>	<i>Preferred Alternative</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
Nonmotorized	<ul style="list-style-type: none"> Mixing zone of pedestrians, trail users, and business functions (sidewalk café) at 24th Ave NW/NW Market St intersection Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Heavy industrial nature, building orientation, and special truck movements on unimproved NW 54th St right-of-way affect nonmotorized experience Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Mixing zone of pedestrians, trail users, and business functions (sidewalk café) at 24th Ave NW/NW Market St intersection Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Mixing zone of pedestrians, trail users, and business functions (sidewalk café) at 24th Ave NW/NW Market St intersection Some trail design components could create obstacles for trail users
Central Segment (between 24th Ave NW and 15th Ave NW)					
Driveways	<ul style="list-style-type: none"> Crosses about 23 driveways/loading zones along this segment Driveways are primarily industrial Driveways are organized and delineated Areas with multiple driveways within close proximity, such as near Salmon Bay Sand and Gravel and Covich Williams 	<ul style="list-style-type: none"> Crosses about 23 driveways/loading zones along this segment Driveways are primarily industrial Driveways are organized and delineated Areas with multiple and wide driveways within close proximity, such as near Salmon Bay Sand and Gravel and Covich Williams 	<ul style="list-style-type: none"> Crosses about 37 driveways/loading zones along this segment Driveways are commercial/retail and industrial Driveways are organized and delineated Areas with multiple driveways within close proximity, such as Salmon Bay Sand and Gravel 	<ul style="list-style-type: none"> Crosses about 28 driveways/loading zones along this segment Driveways are primarily commercial/retail and industrial. Driveways are organized and delineated Areas with multiple driveways within close proximity, such as Ballard Hardware and Ballard Sheet Metal Works 	<ul style="list-style-type: none"> Crosses about 14 driveways/loading zones along this segment Driveways are primarily commercial/retail Driveways are organized and delineated
Intersections	<ul style="list-style-type: none"> There is 1 crossing of an unsignalized intersection approach 	<ul style="list-style-type: none"> There is 1 crossing of an unsignalized intersection approach 	<ul style="list-style-type: none"> There are 1 crossing of a signalized intersection approach and 5 crossings of an unsignalized intersection approach 	<ul style="list-style-type: none"> There are 1 crossing of a signalized intersection approach, 1 crossing of a rapid flashing beacon, and 6 crossings of an unsignalized intersection approach 	<ul style="list-style-type: none"> There are 2 crossings of a signalized intersection approach and 6 crossings of an unsignalized intersection approach

<i>Element</i>	<i>Preferred Alternative</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
Sight Line Concerns	<ul style="list-style-type: none"> Buildings set back from property lines except near Ballard Mill Marina. Trail has been buffered in this area by relocating rail line adjacent to property lines. 	<ul style="list-style-type: none"> Buildings set back from property line except near Ballard Mill Marina. Trail placement is constricted by existing rail line and is adjacent to buildings in this area. 	<ul style="list-style-type: none"> Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk 	<ul style="list-style-type: none"> Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk 	<ul style="list-style-type: none"> Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk
Traffic/Roadway Changes	<ul style="list-style-type: none"> Intersection of 17th Ave NW and Shilshole Ave NW signalized Railroad tracks removed or relocated closer to property frontages between Hatton Marine driveway (about 600 feet west of 17th Ave NW) to just east of Ballard Bridge to allow additional right-of-way space for the trail 	<ul style="list-style-type: none"> Intersection of 17th Ave NW and Shilshole Ave NW signalized Railroad tracks may be removed or relocated to allow additional right-of-way space for the trail 	<ul style="list-style-type: none"> Intersection of 17th Ave NW and Shilshole Ave NW signalized 	<ul style="list-style-type: none"> Rapid flashing beacon installed at 15th Ave NW and NW 46th St 	<ul style="list-style-type: none"> NW Leary Way/ Leary Ave NW reduced by one lane in each direction
Nonmotorized	<ul style="list-style-type: none"> Trail crossing with active rail line Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Trail crossing with active rail line Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Potential user conflicts with Ballard Farmers Market Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> Sidewalk reduced by about 12 feet on NW Market (between 24th Ave NW and 22nd Ave NW) to add the BGT Missing Link in heavy pedestrian, transit, and commercial/retail corridor Some trail design components could create obstacles for trail users

<i>Element</i>	<i>Preferred Alternative</i>	<i>Shilshole South Alternative</i>	<i>Shilshole North Alternative</i>	<i>Ballard Avenue Alternative</i>	<i>Leary Alternative</i>
East Segment (Between 15th Ave NW and 11th Ave NW)					
Driveways	<ul style="list-style-type: none"> • Crosses about 8 driveways/loading zones along this segment • Driveways are primarily industrial • Driveways are organized and delineated 	<ul style="list-style-type: none"> • Crosses about 7 driveways/loading zones along this segment • Driveways are primarily industrial • Driveways are organized and delineated 	<ul style="list-style-type: none"> • Crosses about 9 driveways/loading zones along this segment • Driveways are commercial/retail and industrial • Driveways are organized and delineated • Crossing with heavy traffic volume driveway (Ballard Blocks) 	<ul style="list-style-type: none"> • Crosses about 6 driveways/loading zones along this segment • Driveways are primarily industrial • Driveways are organized and delineated 	<ul style="list-style-type: none"> • Crosses about 7 driveways/loading zones along this segment • Driveways are commercial/retail • Driveways are organized and delineated
Intersections	<ul style="list-style-type: none"> • There are 3 crossings of an unsignalized intersection approach 	<ul style="list-style-type: none"> • There are 3 crossings of an unsignalized intersection approach 	<ul style="list-style-type: none"> • There are 2 crossings of a signalized intersection approach and 3 crossings of an unsignalized intersection approach 	<ul style="list-style-type: none"> • There is 1 crossing of a signalized intersection approach and 2 crossings of an unsignalized intersection approach 	<ul style="list-style-type: none"> • There are 4 crossings of a signalized intersection approach, and 2 crossings of an unsignalized intersection approach
Sight Line Concerns	<ul style="list-style-type: none"> • Buildings constructed up to property lines, but trail is buffered from property lines by parking 	<ul style="list-style-type: none"> • Buildings constructed up to property lines, but trail is buffered from property lines by parking 	<ul style="list-style-type: none"> • Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk 	<ul style="list-style-type: none"> • Buildings constructed up to property lines, but trail is buffered from property lines by sidewalk 	<ul style="list-style-type: none"> • Buildings set back from property lines, but trail is buffered from property lines by sidewalk
Traffic/Roadway Changes	<ul style="list-style-type: none"> • NW 45th St restored to two-way traffic • Railroad tracks along NW 45th St would be removed or relocated to allow additional right-of-way space for the trail 	<ul style="list-style-type: none"> • NW 45th St restored to two-way traffic • Railroad tracks along NW 45th St would be removed or relocated to allow additional right-of-way space for the trail 	<ul style="list-style-type: none"> • NW 45th St restored to two-way traffic 	<ul style="list-style-type: none"> • NW 45th St restored to two-way traffic 	<ul style="list-style-type: none"> • NW 45th St restored to two-way traffic
Nonmotorized	<ul style="list-style-type: none"> • Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> • Some trail design components could create obstacles for trail users 	<ul style="list-style-type: none"> • Some trail design components could create obstacles for trail users • Trail crossing with inactive rail line 	<ul style="list-style-type: none"> • Some trail design components could create obstacles for trail users • Trail crossing with inactive rail line 	<ul style="list-style-type: none"> • Some trail design components could create obstacles for trail users • Trail crossing with inactive rail line

Summary of Mitigation Measures

Table ES-6 summarizes the mitigation measures that could be considered for all Build Alternatives. Refer to the individual chapters in the FEIS for further discussion of mitigation measures.

Table ES-6. 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 Stormwater 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 during construction, 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. • If the City requires temporary construction easements, the City would provide just compensation per code requirements. • The City would maintain access to private property to the maximum extent feasible during construction.

<i>Element of the Environment</i>	<i>Potential Mitigation Measures</i>
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.
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 during construction. • 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-7 summarizes the mitigation measures that could vary by alternative. Refer to the individual chapters in the FEIS 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-7. Mitigation Measures Varying by Alternative

<i>Element of the Environment</i>	<i>Preferred Alternative</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"> 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"> 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"> 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. Complete Dept. of Archaeology & Historic Preservation (DAHP) Level II documentation of the segment of the rail line that would be relocated, if required. 	<ul style="list-style-type: none"> No specific mitigation measures identified. Complete DAHP Level II documentation of the segment of the rail line that would be relocated, if required. 	<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. Refer to Chapter 11 of the FEIS for a complete discussion of cumulative impacts.

Public Comment Summary

SDOT published the DEIS on June 16, 2016. A 45-day comments period was open until August 1, 2016 and included public meetings on July 14, 2016 and July 16, 2016. In response to public comment and meetings with area businesses and interest groups, SDOT developed the Preferred Alternative, which combines components previously analyzed in the Build Alternatives. The FEIS contains the responses to the comments in Volume 2.

Public Comment Summary

Comments received on the DEIS included oral testimonies received at the July public meetings, emails, and mailed comment letters. Approximately 270 people attended the public meetings. A total of approximately 4,400 comments (including oral comments) were received during the 45-day public comment period, excluding duplicates. In addition to unique letters or emails, survey form letters were used by the Olympic Athletic Club/Farmers Market group and Cascade Bicycle Club soliciting preference of alternative from approximately 3,400 people. In addition, an email form letter was received by approximately 360 people; these comments were identical or substantively similar, as some commenters customized the template with personal experiences or unique concerns. Figure ES-3 lists the types of comment letters received.

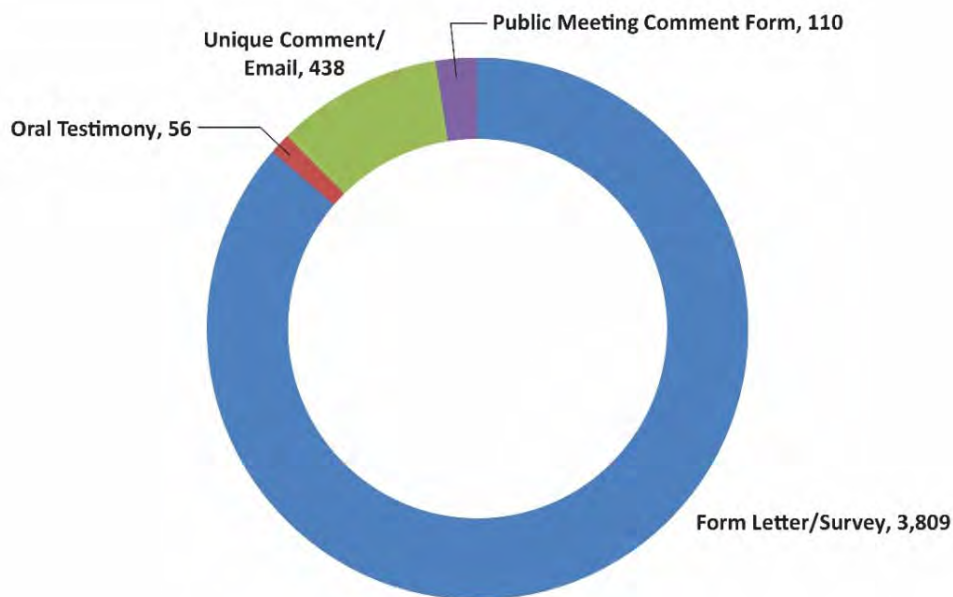


Figure ES-3. Number and Type of Comment Letters Received

Preferred Route

The majority of commenters expressed a preference for route. Of all the comments received, 77% preferred the Shilshole South Alternative; 2% each for either the Shilshole North or either Shilshole Alternative; 5% for the Leary Alternative; and 1% for the Ballard Avenue Alternative (as shown in Figure ES-4). A total of 4% expressed a preference for a hybrid alternative, the No Build Alternative, or something other. Approximately 9% of the commenters expressed no preference.

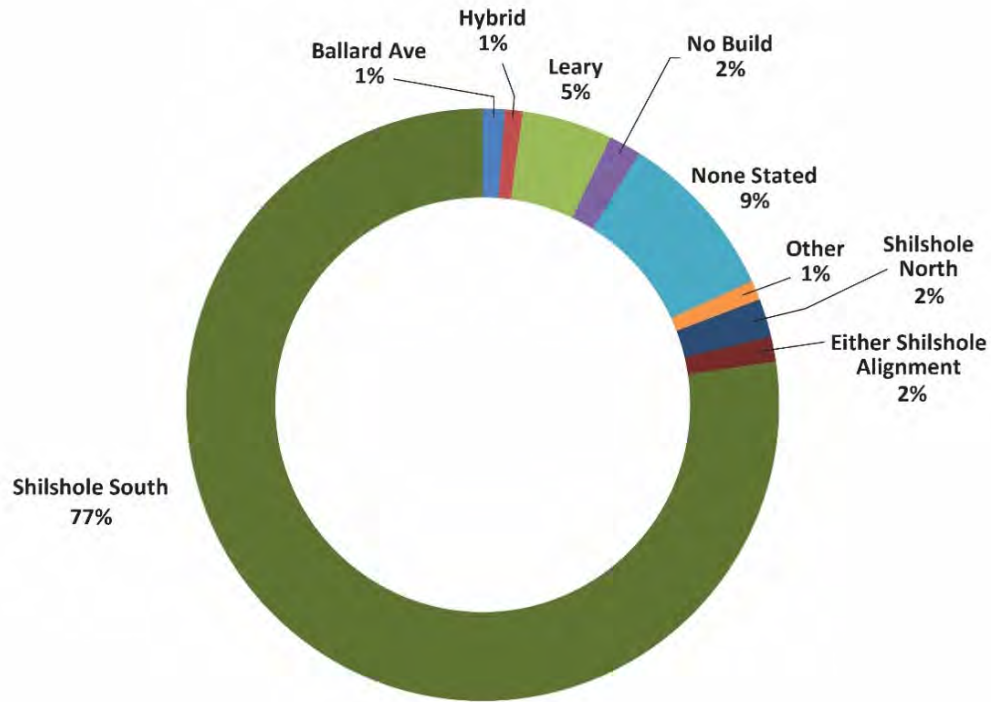


Figure ES-4. Route Preference

Project Concerns

Regardless of support or opposition to the project, the most common concerns expressed were related to maintaining the Farmers Market, followed by safety. Trail design, maintaining the industrial corridor, and directness of route were also common concerns noted. Figure 1-15 shows the most common comment topics made in the comment letters. (Note: Many comment letters addressed multiple topics.)

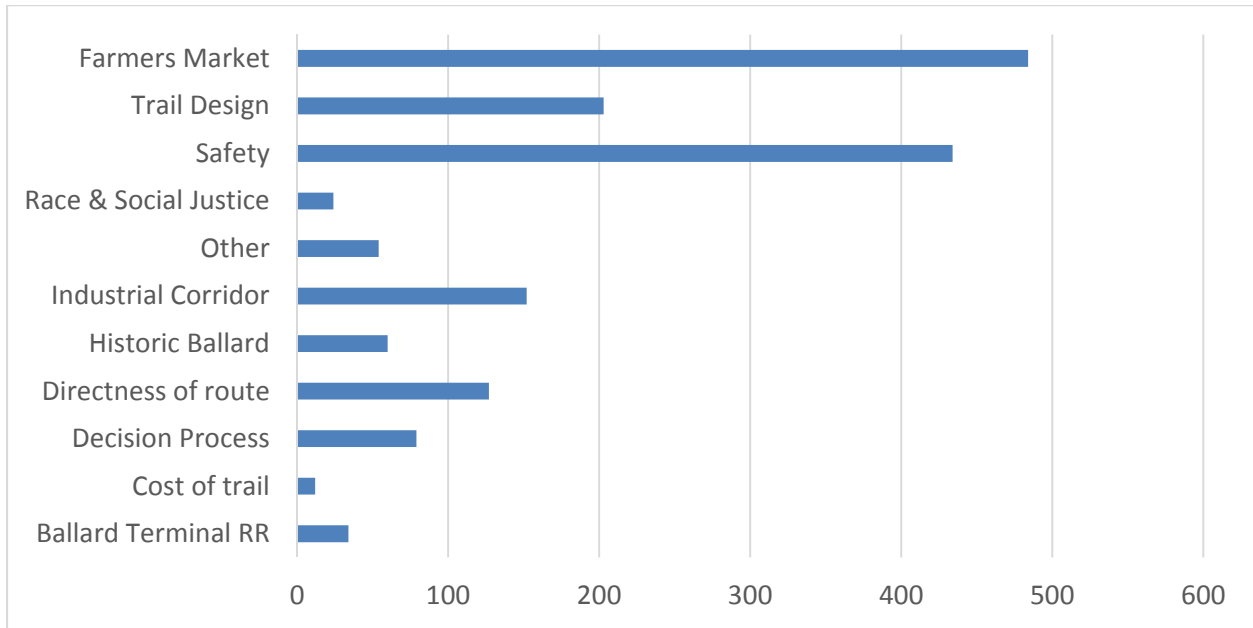


Figure ES-5. Counts of Leading Concerns Raised in the Comment Letters

Next Steps

SDOT will continue working with property owners, businesses, residents, and other interested parties throughout the design phase of the project and through construction. It is anticipated that the design will be complete by early 2018, and construction of the trail would begin in spring 2018.