ES.3.1.1.2. Duwamish Segment

The Duwamish Segment includes the area between South Forest Street in the SODO neighborhood and the intersection of Southwest Charlestown Street and Delridge Way Southwest in the Delridge neighborhood. There are two alternatives and one design option, which are mostly elevated and include a bridge over the Duwamish Waterway. The location of the bridge varies by alternative and design option. Figures ES-10, ES-11, and ES-12 show the Duwamish Segment alternatives, and their connections with alternatives in adjacent segments. The pink color is used for preferred alternatives, brown is used for preferred alternatives with third-party funding, and blue is used for other alternatives. The figures also show the Duwamish Segment alternatives in plan view and in profile view. This segment does not include a station, but does include a connection to the existing Central Operations and Maintenance Facility. The Duwamish Segment alternatives are shown together on Figure ES-13.

Figure ES-10. Duwamish Segment - Preferred South Crossing Alternative (DUW-1a)

Alignment: Elevated along the west side of the existing light rail line, south from South Forest Street; continuing southwest to cross over to the south side of the Spokane Street Bridge and the West Seattle Bridge. The height of the bridge could be adjusted through coordination with the United States Coast Guard. The guideway would continue west and to the south side of the West Seattle Bridge, crossing over the Duwamish Waterway and Harbor Island on a new high-level fixed bridge. The guideway would then cross the northern edge of Pigeon Point in a combination of elevated guideway and retained cut-and-fill, turning southwest on an elevated structure that follows Delridge Way Southwest.

Station: None.

Figure ES-11. Duwamish Segment - South Crossing South Edge Crossing Alignment Option (DUW-1b)

Alignment: Same as the South Crossing Alternative except it would cross the Duwamish Waterway at a location farther south, over the southern edge of Harbor Island. The height of the bridge could be adjusted through coordination with the United States Coast Guard.

Station: None.

Figure ES-12. Duwamish Segment - North Crossing Alternative (DUW-2)

Alignment: Elevated along the west side of the existing light rail line south from South Forest Street; continuing west on a new high-level fixed bridge north of the existing West Seattle Bridge, crossing the West Duwamish Waterway. The height of the bridge could be adjusted through coordination with the United States Coast Guard. The guideway would cross over the West Seattle Bridge and associated ramps, continuing south on the west side of Delridge Way Southwest.

Station: None.
Comparison of Duwamish Segment Alternatives

Table ES-2 and the following text summarize the key environmental impacts of the Duwamish Segment alternatives.

Preferred Alternative DUW-1a and Option DUW-1b would have greater park impacts than Alternative DUW-2. Most of the park impacts would occur in the West Duwamish Greenbelt, which serves as wildlife habitat and visual buffer, and is home to a great blue heron colony. Preferred Alternative DUW-1a and Option DUW-1b would result in the removal of trees in the great blue heron management area. Preferred Alternative DUW-1a would also impact habitat enhancements that may occur at the City of Seattle’s Bluefield Holdings/Wildlands Site 2. Alternative DUW-2 would avoid impacts to the greenbelt but could impact the Port of Seattle’s proposed habitat restoration site at Terminal 25.

Sound Transit is evaluating multiple bridge types for crossing the Duwamish Waterway. Depending on bridge type, Preferred Alternative DUW-1a and Alternative DUW-2 could potentially avoid placing guideway columns in the water. Option DUW-1b would require guideway columns in the water for all bridge types. There are two Superfund sites with ongoing cleanups that overlap with the project limits in the Duwamish Segment. Sound Transit would coordinate with the United States Environmental Protection Agency and the Washington State Department of Ecology on any potential protective measures or restrictions that might be required for the project. In-water guideway columns would permanently remove benthic habitat within waters that are essential fish habitat and critical habitat for listed salmon species. The Muckleshoot Indian Tribe is signatory to both the Treaty of Point Elliott and the Treaty of Medicine Creek. The Muckleshoot Indian Tribe has treaty-protected fishing rights and Usual and Accustomed Areas in the Puget Sound region, which includes the Duwamish Waterway. The Suquamish Tribe of the Port Madison Reservation (Suquamish Tribe) is signatory to the Treaty of Point Elliott and has treaty-protected fishing rights and Usual and Accustomed Areas in the Puget Sound region, which also includes the Duwamish Waterway. The Muckleshoot Indian Tribe may be temporarily affected during in-water construction or permanently affected by placement of guideway columns in the water. Some bridge types could also impact treaty-protected fishing rights and access to the Usual and Accustomed Areas of the Muckleshoot Indian Tribe and the Suquamish Tribe.

All alternatives would maintain the existing horizontal and vertical clearance over the United States Army Corps of Engineers-maintained navigation channel in the West Duwamish Waterway. Alternative DUW-2 would reduce the horizontal and vertical clearance of the United States Army Corps of Engineers-maintained navigation channel in the East Duwamish Waterway, just north of the existing Spokane Street Bridge.
All of the alternatives in this segment would displace businesses (and their employees) that are water-dependent or that support water-dependent businesses, which could be difficult to relocate. Based on available business information, Alternative DUW-2 would displace the most water-dependent businesses. The displacement of these businesses could impair the operations of waterway transportation and shipment of goods. As a result, there could be a broader effect on regional jobs and income than the jobs and businesses displaced directly by the WSBLE Project. Option DUW-1b would permanently displace moorage on the Duwamish Waterway, and all alternatives would temporarily displace moorage during construction. Replacement moorage is unlikely to be found nearby on the Duwamish Waterway and Elliott Bay.

When connected with the Delridge Way Station Alternative (Alternative DEL-3) or the Delridge Way Station Lower Height Alternative (Alternative DEL-4*), Preferred Alternative DUW-1a and Option DUW-1b would require temporary relocation of Fire Station 36 during construction and could potentially require permanent relocation. Alternative DUW-2 would potentially require temporary relocation of parking and training facilities at Fire Station 14 during construction. If these relocations were necessary, Sound Transit would work closely with Seattle Fire Department officials to identify a suitable property within the surrounding area and ensure operations continue with minimal impacts during relocation. Alternative DUW-2 and Option DUW-1b would adversely affect a similar number of historic resources, but Option DUW-1b would have adverse effects to two historic districts. DUW-1a have fewer adverse effects but would also have adverse effects to two historic districts.

Alternative DUW-2 would temporarily close lanes of Chelan Avenue west of the West Marginal Way/Spokane Street/Chelan Avenue intersection. During construction, increased traffic congestion is expected at this intersection, with short-term lane closures on Chelan Avenue Southwest; however, one lane in each direction would be maintained. The Ballard Link Extension-only M.O.S. would also result in impacts in the Duwamish Segment, as noted in Table ES-2 and described in Section ES.3.1.2.1.

### Table ES-2. Key Environmental Impacts of the Duwamish Segment Alternatives

<table>
<thead>
<tr>
<th>Resource Impact Measure</th>
<th>Preferred South Crossing Alternative (DUW-1a) *</th>
<th>South Crossing South Edge Crossing Alignment Option (DUW-1b) *</th>
<th>North Crossing Alternative (DUW-2) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>1.2 to 1.3 B</td>
<td>1.3 B</td>
<td>1.5 B</td>
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<tr>
<td>Operational Transportation Impacts</td>
<td>0 intersections impacted.</td>
<td>0 intersections impacted.</td>
<td>0 intersections impacted.</td>
</tr>
<tr>
<td>Construction Transportation Impacts</td>
<td>Detour a portion of the Delridge Connector Trail. Closure of the staircase through the West Duwamish Greenbelt.</td>
<td>Detour a portion of the Delridge Connector Trail. Closure of the staircase through the West Duwamish Greenbelt.</td>
<td>Partial closure of Chelan Avenue west of the West Marginal Way/Spokane Street/Chelan Avenue intersection (3 months).</td>
</tr>
<tr>
<td>Potential Displacements a</td>
<td>Residential: 22 to 26 Business: 35 to 36 Employees: 670 to 680</td>
<td>Residential: 23 to 26 Business: 28 to 29 Employees: 680 to 690</td>
<td>Residential: 0 Business: 38 Employees: 400</td>
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<td>Length of Potential Operational Visual Impacts (miles)</td>
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<td>0.1</td>
<td>0</td>
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<td>Potential Operational Noise Impacts before Mitigation (all impacts can be mitigated) b</td>
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<td>10 to 12</td>
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<td>Potential Operational Vibration or Groundborne Noise Impacts before Mitigation (all impacts can be mitigated) c</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Biodiversity Area Impacts (acres operational/acute construction)</td>
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<td>1.9/0.6</td>
<td>0/0</td>
</tr>
<tr>
<td>In-water (Benthic Surface) Impacts (acres operational/acute construction) d</td>
<td>0 to &lt;0.1/0.5 to 0.5</td>
<td>&lt;0.1 to 0.4/0.6 to 1.0</td>
<td>0 to 0.5/0.9</td>
</tr>
<tr>
<td>Historic Properties and Historic Districts with Adverse Effects e</td>
<td>6</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Park and Recreational Resources Impacts (acres operational/acute construction)</td>
<td>1.4 to 1.5/0.2 to 0.4</td>
<td>1.8 to 1.9/0.6 to 0.8</td>
<td>0</td>
</tr>
</tbody>
</table>

* Ranges reflect differences from connecting to different alternatives in adjacent segments. Cost range is due to Preferred Alternative DUW-1a costing more when connecting to Alternatives DEL-3 and DEL-4*.

b The Ballard Link Extension-only M.O.S. would result in some of the impacts identified in this table: one business displacement with five employees, one noise impact (which can be mitigated), and adverse effects to two historic properties.

c The numbers presented are the number of units, counted by individual residences, including individual units of multi-family structures, and number of structures for other uses, like schools, churches, and parks.

d The ranges shown represent impacts from different bridge types considered.

e Potentially adversely affected under Section 106 (to be confirmed through consultation with State Historic Preservation Officer).

January 2022

West Seattle and Ballard Link Extensions Draft EIS

EXECUTIVE SUMMARY | ES-12
ES.3.1.1.3. Delridge Segment

The Delridge Segment includes the area between Southwest Charlestown Street and 31st Avenue Southwest, and has one station, the Delridge Station. There are six alternatives and two design options in this segment. All of the Delridge Segment alternatives and design options are elevated, but four of them are lower height alternatives that enter into a tunnel portal on the west end near the West Seattle Junction Segment. Four of the alternatives generally follow Delridge Way Southwest and Southwest Genesee Street. Two design options are on the north side of Southwest Genesee Street. Two alternatives are further north, near Southwest Andover Street. Figures ES-14 through ES-21 show the Delridge Segment alternatives and their connections with alternatives in adjacent segments. The pink color is used for preferred alternatives, brown is used for preferred alternatives with third-party funding, and blue is used for other alternatives. The figures also show the Delridge Segment alternatives in plan view and in profile view. The Delridge Segment alternatives are shown together on Figure ES-22.

Figure ES-14. Delridge Segment - Preferred Dakota Street Station Alternative (DEL-1a)

Alignment: Elevated along the west side Delridge Way Southwest (except at Southwest Andover Street); continuing south to an elevated station; turning to the west and crossing to the south side of the Southwest Genesee Street right-of-way, north of the West Seattle Golf Course.

Station: Delridge Station - Elevated station south of Southwest Dakota Street, oriented southwest-northeast.

Figure ES-15. Delridge Segment - Dakota Street Station North Alignment Option (DEL-1b)

Alignment: Similar to Preferred Alternative DEL-1a, except it would shift to the north side of Southwest Genesee Street west of 28th Avenue Southwest.

Station: Same as Preferred Alternative DEL-1a.

Genesee Street. Two alternatives are further north, near Southwest Andover Street. Figures ES-14 through ES-21 show the Delridge Segment alternatives and their connections with alternatives in adjacent segments. The pink color is used for preferred alternatives, brown is used for preferred alternatives with third-party funding, and blue is used for other alternatives. The figures also show the Delridge Segment alternatives in plan view and in profile view. The Delridge Segment alternatives are shown together on Figure ES-22.
Preferred Dakota Street Station Lower Height (DEL-2a)*

**Alignment:** Elevated along the west side Delridge Way Southwest (except at Southwest Andover Street); continuing south to an elevated station; turning to the west and crossing to the south side of the Southwest Genesee Street right-of-way, north of the West Seattle Golf Course, with a tunnel portal for connecting to tunnel alternatives in the West Seattle Junction Segment in the northwest corner of the West Seattle Golf Course, south of Southwest Genesee Street and east of 31st Avenue Southwest.

**Station:** Delridge Station – Elevated station south of Southwest Dakota Street, oriented southwest-northeast.

Dakota Street Station Lower Height North Alignment Option (DEL-2b)*

**Alignment:** Similar to the Preferred Alternative DEL-2a*, except it would shift to the north side of Southwest Genesee Street west of 28th Avenue Southwest, with a tunnel portal north of Southwest Genesee Street, between Southwest Avalon Way and 30th Avenue Southwest.

**Station:** Same as Preferred Alternative DEL-2a*.
Figure ES-18. Delridge Segment - Delridge Way Station Alternative (DEL-3)

Alignment: Elevated along Delridge Way Southwest to the station, turning west and crossing to the south side of the Southwest Genesee Street right-of-way, north of the West Seattle Golf Course and continuing west along the south edge of Southwest Genesee Street.

Station: Delridge Station – Elevated station in the middle of Delridge Way Southwest, north of Southwest Dakota Street.

Figure ES-19. Delridge Segment - Delridge Way Station Lower Height Alternative (DEL-4)*

Alignment: Similar to Alternative DEL-3, except at a lower height to connect to tunnel alternatives in the West Seattle Junction Segment.

Station: Delridge Station – Elevated station in the middle of Delridge Way Southwest, north of Southwest Dakota Street.
Figure ES-20. Delridge Segment - Andover Street Station
Alternative (DEL-5)

**Andover Street Station (DEL-5)**

Alignment: Elevated along the west side of Delridge Way Southwest, north of Southwest Andover Street; continuing west along Southwest Andover Street, then south along Southwest Avalon Way. The elevated guideway would continue south along Southwest Avalon Way, turning west on the north side of Southwest Genesee Street.

Station: Delridge Station – Elevated station north of Southwest Andover Street and west of Delridge Way Southwest in a northeast-southwest orientation.

Figure ES-21. Delridge Segment - Andover Street Station
Lower Height Alternative (DEL-6)*

**Andover Street Station Lower Height (DEL-6)**

Alignment: Elevated along the west side of Delridge Way Southwest, north of Southwest Andover Street; continuing west along Southwest Andover Street. The elevated guideway would cross over Southwest Avalon Way and turn south in the vicinity of 32nd Avenue Southwest to travel south along the east side of the West Seattle Bridge connection to Fauntleroy Way Southwest, transitioning from elevated into a retained cut. Near Southwest Genesee Street, the guideway would turn west, continuing in a retained cut, passing below Southwest Genesee Street.

Station: Delridge Station – Elevated station north of Southwest Andover Street and west of Delridge Way Southwest in a northeast-southwest orientation.
Figure ES-22. Delridge Segment Alternatives, West Seattle Link Extension

The Delridge Segment alternatives would all be in a primarily single-family residential neighborhood where the elevated guideway and station would become a dominant feature. The alternatives with stations at Dakota Street (Preferred Alternative DEL-1a, Option DEL-1b, Preferred Alternative DEL-2a*, and Option DEL-2b*) would displace residential blocks in the southeast corner of the Youngstown area for the elevated guideway and Delridge Station, including some Seattle Housing Authority residences. These alternatives would have the greatest impact on neighborhood character due to the extent of displacements, the isolation of residences that would remain near the intersection of Delridge Way Southwest and Southwest Genesee Street, and visual change. These alternatives would have the greatest number of adverse effects to historic resources. Along with Alternatives DEL-3 and DEL-4*, these alternatives would affect the most area with sensitive viewers due to their height and location in the neighborhood, but impacts would differ among alternatives. Most visual impacts for the Dakota Street and Delridge Way station alternatives would be along Southwest Genesee Street. Alternative DEL-3 and Alternative DEL-4* would affect the neighborhood character in Delridge based on the station location.

Alternative DEL-6* would have fewer residential displacements than the other alternatives. All alternatives except for Alternatives DEL-5 and DEL-6* would displace Washington State Department of Children, Youth, and Families offices. However, Alternative DEL-5 would displace a duplex located near the station, and Alternative DEL-6* would displace the Transitional Resources main office, onsite supportive housing, and adjacent apartment building. Transitional Resources is a non-profit organization that provides behavioral health services and supportive housing to help people make a transition to stable living in the community. Alternatives DEL-5 and DEL-6* would also have the most business displacements. All alternatives would displace a small business center that houses the neighborhood coffee shop, sandwich shop, and deli mart in an area with limited neighborhood commercial uses. All alternatives would require temporary construction closures on arterials, which would affect residents in Delridge, the adjacent neighborhoods, and those traveling to social resources in Delridge.

All alternatives except for Alternatives DEL-5 and DEL-6* would affect the West Seattle Golf Course, but only Preferred Alternative DEL-2a* and Alternative DEL-4* would permanently affect the playable area. The north alignment options (Option DEL-1b and Option DEL-2b*) would have less than 0.1 acre impact to Longfellow Creek Natural Area along Southwest Genesee Street, and Alternative DEL-3 would have similar impacts at a corner of Delridge Playfield.
If the Delridge Station was a terminus station of an M.O.S., it would have close to twice as many daily boardings due to the additional bus service connections to the station. Bus services from the west (Alaska Junction area) and south would be rerouted to serve the Delridge terminus station. Alternatives DEL-3 and DEL-4* would result in four additional residential property acquisitions to allow for the terminus station to accommodate additional bus layover facilities.

### Table ES-3. Key Environmental Impacts of the Delridge Segment Alternatives

<table>
<thead>
<tr>
<th>Resource Impact Measure</th>
<th>Preferred Dakota Street Station Alternative (DEL-1a)*</th>
<th>Dakota Street Station North Alignment Option (DEL-1b)*</th>
<th>Preferred Dakota Street Station Lower Height North Alignment Alternative (DEL-2a)*</th>
<th>Dakota Street Station Lower Height North Alignment Option (DEL-2b)*</th>
<th>Delridge Way Station Lower Height Alternative (DEL-3)*</th>
<th>Delridge Way Station Lower Height Alternative (DEL-4)*</th>
<th>Andover Street Station Lower Height Alternative (DEL-5)</th>
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<tr>
<td>Cost</td>
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<td>700 M</td>
<td>400 M</td>
<td>500 M</td>
<td>600 M</td>
<td>500 M</td>
<td>400 M</td>
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<tr>
<td>Ridership (daily boardings)</td>
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<td>5,800 5,800</td>
<td>5,800 5,800 5,800 5,800</td>
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<td>1 intersection impacted.</td>
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<td>1 intersection impacted (+1 with M.O.S.).</td>
<td>2 intersections impacted (+1 with M.O.S.).</td>
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<td>Full closure on Delridge Way Southwest (nights/weekends), Southwest Dakota Street and Southwest Genesee Street (2 years). Partial closure on Delridge Way Southwest (9 months).</td>
<td>Full closure on Delridge Way Southwest (nights/weekends), Southwest Dakota Street and Southwest Genesee Street (2 years). Partial closure on Delridge Way Southwest (9 months).</td>
<td>Full closure on Delridge Way Southwest (nights/weekends), Southwest Dakota Street and Southwest Genesee Street (2 years). Partial closure on Delridge Way Southwest (9 months).</td>
<td>Full closure on Delridge Way Southwest (nights/weekends), Southwest Dakota Street and Southwest Genesee Street (2 years). Partial closure on Delridge Way Southwest (9 months).</td>
<td>Full closure on Delridge Way Southwest (nights/weekends), Southwest Dakota Street and Southwest Genesee Street (2 years). Partial closure on Delridge Way Southwest (9 months).</td>
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<tr>
<td>Length of Potential Operational Visual Impacts (miles)</td>
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<td>232</td>
<td>178</td>
<td>208</td>
<td>237</td>
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<td>12</td>
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<td>6</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>2</td>
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<td>Park and Recreational Resources Impacts (acres operational)/acres construction</td>
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<td>0.1/0.2</td>
<td>1.4/1.3</td>
<td>0.9/1.0</td>
<td>0.6/1.3</td>
<td>1.3/1.4</td>
<td>0/0</td>
</tr>
</tbody>
</table>

* Ranges reflect differences from connecting to different alternatives in adjacent segments.
* The numbers presented are the number of units, counted by individual residences, including individual units of multi-family structures, and number of structures for other uses, like schools, churches, and parks.
* Potentially adversely affected under Section 106 (to be confirmed through consultation with State Historic Preservation Officer).
West Seattle Junction Segment

The West Seattle Junction Segment includes the area generally west of 31st Avenue Southwest, between Southwest Charleston Street and Southwest Hudson Street. There are five alternatives and one design option. All alternatives would have two stations: Avalon and Alaska.

Figure ES-23. West Seattle Junction Segment - Preferred Elevated 41st/42nd Avenue Station Alternative (WSJ-1)

Preferred Elevated 41st/42nd Avenue Station (WSJ-1)

Alignment: Elevated along the south side of Southwest Genesee Street between 31st Avenue Southwest and Fauntleroy Way Southwest; turning southwest on the west side of Fauntleroy Way Southwest, turning south in the vicinity of 41st Avenue Southwest and Southwest Alaska Street and continues south to Southwest Hudson Street; ends on the west side of 42nd Avenue Southwest with tail track south of the Alaska Junction Station. A hi-rail access road would be provided for maintenance access.

Stations:
- Avalon Station: Elevated along the south side of Southwest Genesee Street, east of 35th Avenue Southwest.
- Alaska Junction Station: elevated between 41st Avenue Southwest and 42nd Avenue Southwest, south of Southwest Alaska Street.

Figure ES-24. West Seattle Junction Segment - Preferred Elevated Fauntleroy Way Station Alternative (WSJ-2)

Preferred Elevated Fauntleroy Way Station (WSJ-2)

Alignment: Elevated along the south side of Southwest Genesee Street between 31st Avenue Southwest and Fauntleroy Way Southwest. The alignment would head southwest on Fauntleroy Way Southwest and continue along the west side of Fauntleroy Way Southwest. The guideway would cross to the east side of Fauntleroy Way Southwest north of Southwest Oregon Street. This alternative would also include a hi-rail access road for maintenance of the guideway. Elevated tail tracks would begin south of the Alaska Junction Station and end within the Fauntleroy Way Southwest right-of-way just past Southwest Edmunds Street.

Stations:
- Avalon Station: Elevated along the south side of Southwest Genesee Street and east of 35th Avenue Southwest.
- Alaska Junction Station: Elevated southeast of Fauntleroy Way Southwest straddling Southwest Alaska Street.

Although tunnel alternatives are considered in the environmental review for this segment, a tunnel in West Seattle was not included in the Sound Transit 3 Plan (Sound Transit 2016), and, therefore, third-party funding could be required for the tunnel alternatives.
Figure ES-25. West Seattle Junction Segment - Preferred Tunnel 41st Avenue Station Alternative (WSJ-3a)*

Preferred Tunnel 41st Avenue Station (WSJ-3a)*

Alignment: Tunnel under Southwest Genesee Street heading west from 31st Avenue Southwest, then curving to the southwest between 37th Avenue Southwest and 41st Avenue Southwest, ending in the vicinity of Southwest Hudson Street, with the tail track in a north-south orientation under 41st Avenue Southwest.

Stations:
- **Avalon Station**: Tunnel beneath Southwest Genesee Street and Fauntleroy Way Southwest.
- **Alaska Junction Station**: Tunnel beneath 41st Avenue Southwest and Southwest Alaska Street.

Figure ES-26. West Seattle Junction Segment - Preferred Tunnel 42nd Avenue Station Option (WSJ-3b)*

Preferred Tunnel 42nd Avenue Station Option (WSJ-3b)*

Alignment: Tunnel under Southwest Genesee Street heading west from 31st Avenue Southwest, then curving to the southwest between 37th Avenue Southwest and 42nd Avenue Southwest, ending in the vicinity of Southwest Hudson Street, with the tail track in a north-south orientation under 42nd Avenue Southwest.

Stations:
- **Avalon Station**: Tunnel beneath Southwest Genesee Street and Fauntleroy Way Southwest.
- **Alaska Junction Station**: Tunnel beneath 42nd Avenue Southwest and Southwest Alaska Street.

Diagrams are not to scale and all measurements are approximate for illustration purposes only.
### Short Tunnel 41st Avenue Station Alternative (WSJ-4)*

**Alignment:** Elevated along the south side of Southwest Genesee Street from 31st Avenue Southwest to the west side of Fauntleroy Way Southwest, continuing along the west side of Fauntleroy Way Southwest on elevated guideway before transitioning to at-grade near 37th Avenue Southwest. This alternative would include a hi-rail access road for maintenance, which would start at-grade and transition to an elevated structure to reach the height of the guideway. The guideway would turn west near Southwest Oregon Street and transition into a tunnel with a portal in the vicinity of Southwest Oregon Street and 38th Avenue Southwest. The tunnel would turn south and end south of Southwest Hudson Street, with a tail track in a north-south orientation along and under 41st Avenue Southwest.

**Stations:**
- **Avalon Station:** Elevated along the south side of Southwest Genesee Street and east of 35th Avenue Southwest.
- **Alaska Junction Station:** Tunnel beneath 41st Avenue Southwest, south of Southwest Alaska Street.

### Medium Tunnel 41st Avenue Station Alternative (WSJ-5)*

**Alignment:** Tunnel begins in a retained cut south of Southwest Yancy Street and follows the east side of the West Seattle Bridge connection to Southwest Genesee Street, entering into a tunnel at Southwest Genesee Street and 37th Avenue Southwest and curving southwest west of 37th Avenue Southwest to 41st Avenue Southwest to terminate at Southwest Hudson Street, with tail track in a north-south orientation under 41st Avenue Southwest.

**Stations:**
- **Avalon Station:** Retained cut south of Southwest Genesee Street, beneath Fauntleroy Way Southwest.
- **Alaska Junction Station:** Tunnel beneath 41st Avenue Southwest and Southwest Alaska Street.
Comparison of West Seattle Junction Segment Alternatives

Table ES-4 and the following text summarize the key environmental impacts of the West Seattle Junction Segment alternatives.

Preferred Alternative WSJ-1 and Preferred Alternative WSJ-2 would have the most impact on the community because the guideway would be entirely elevated and primarily outside of public right-of-way, which could have effects on neighborhood cohesion.

All alternatives except Preferred Option WSJ-3b* would displace Seattle Housing Authority residences. Preferred Alternative WSJ-1 would displace a Trader Joe’s and a Safeway, while Preferred Alternative WSJ-2 and Preferred Option WSJ-3b* would displace the Safeway. Preferred Option WSJ-3b* would also displace Junction Plaza Park. Alternative WSJ-4* would have the greatest number of adverse effects to historic resources.

The tunnel alternatives would have fewer neighborhood impacts because the alternatives would be below-grade except for station entrances, minimizing surface impacts. Alternative WSJ-4* and Alternative WSJ-5* would have greater neighborhood impacts than Preferred Alternative WSJ-3a* or Preferred Option WSJ-3b* because more of the alternative would be above ground. The tunnel alternatives would also reduce construction impacts on the community because much of the construction activity (except for the stations and the tunnel portals) would be underground. However, the tunnel alternatives would have the greatest potential for noise impacts during construction, including night-time construction noise at the tunnel portals.
Table ES-4: Key Environmental Impacts of the West Seattle Junction Segment Alternatives

<table>
<thead>
<tr>
<th>Resource Impact Measure</th>
<th>Preferred Elevated 41st/42nd Avenue Station Alternative (WSJ-1)</th>
<th>Preferred Elevated Fauntleroy Way Station Alternative (WSJ-2)</th>
<th>Preferred Tunnel 41st Avenue Station Alternative (WSJ-3a)</th>
<th>Preferred Tunnel 42nd Avenue Station Option (WSJ-3b)</th>
<th>Short Tunnel 41st Avenue Station Alternative (WSJ-4)</th>
<th>Medium Tunnel 41st Avenue Station Alternative (WSJ-5)</th>
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<td>1.3 B</td>
<td>1.7 B</td>
<td>1.7 B</td>
<td>1.3 B</td>
<td>1.1 B</td>
<td>1.1 B</td>
</tr>
<tr>
<td>Ridership (daily boardings)</td>
<td>7,600</td>
<td>7,700</td>
<td>7,600</td>
<td>7,600</td>
<td>7,600</td>
<td>7,600</td>
</tr>
<tr>
<td>Operational Transportation Impacts</td>
<td>2 intersection impacted.</td>
<td>3 intersections impacted.</td>
<td>1 intersection impacted.</td>
<td>1 intersection impacted.</td>
<td>0 intersections impacted.</td>
<td>0 intersections impacted.</td>
</tr>
<tr>
<td>Construction Transportation Impacts</td>
<td>Full closure on Fauntleroy Way Southwest (nights/weekends), and 35th Avenue Southwest (nights/weekends).</td>
<td>Full closure on Fauntleroy Way Southwest (nights/weekends), 35th Avenue Southwest (nights/weekends), and on Southwest Alaska Street (3 years).</td>
<td>Full closure on 35th Avenue Southwest (3 years). Partial closure on Fauntleroy Way Southwest (1.5 years).</td>
<td>Full closure on 35th Avenue Southwest (3 years). Partial closure on Fauntleroy Way Southwest (1.5 years).</td>
<td>Full closure on Fauntleroy Way Southwest (nights/weekends), and 35th Avenue Southwest (nights/weekends). Partial closure on Fauntleroy Way Southwest (6 months).</td>
<td>Full closure on 35th Avenue Southwest (1 year). Partial closures on Fauntleroy Way Southwest (1.5 years).</td>
</tr>
<tr>
<td>Length of Potential Operational Visual Impacts (miles)</td>
<td>0.1</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Potential Operational Noise Impacts before Mitigation (all impacts can be mitigated) b</td>
<td>400</td>
<td>351 to 401</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Potential Operational Vibration or Groundborne Noise Impacts before Mitigation (all impacts can be mitigated) c</td>
<td>7</td>
<td>0</td>
<td>24 to 199</td>
<td>269 to 430</td>
<td>153</td>
<td>205</td>
</tr>
<tr>
<td>Historic Properties with Adverse Effects d</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Park and Recreational Resources Impacts (acres operational/ acres construction)</td>
<td>0.1/0</td>
<td>0.1/0</td>
<td>0/0</td>
<td>0.2/0</td>
<td>0/0</td>
<td>0/0</td>
</tr>
</tbody>
</table>

a Ranges reflect differences from connecting to different alternatives in adjacent segments.
b The numbers presented are the number of units, counted by individual residences, including individual units of multi-family structures, and number of structures for other uses, like schools, churches, and parks.
c Potentially adversely affected under Section 106 (to be confirmed through consultation with State Historic Preservation Officer).