West Seattle and Ballard Link Extensions

System Expansion Committee | May 9, 2019
West Seattle & Ballard Link Extensions

Motion No. M2019-51
Identifying Alternatives for DEIS

9 May 2019
Agenda

- Alternatives development process
- Level 3 alternatives and evaluation
- EIS Scoping feedback
- SAG recommendations
- ELG recommendations
- Next steps
Alternatives
development process
New approach to project development

**ST2 process**

- Alternatives development
- Environmental process
- Final design
- Permitting
- ROW acquisition
- Construction

**ST3 process**

- System planning
- Alternatives development
- Representative project
- Environmental process
- Preferred alternative*  
  - Permitting
  - ROW acquisition
  - Final design and construction

*Sound Transit Board identifies preferred alternatives and other alternatives to study in the EIS*
City of Seattle Partnering Agreement

- Partnering agreement executed December 2017

- Identifies project schedule milestones including:

  - Board *identification of preferred alternative*: Q1/Q2 2019

EXHIBIT D

<table>
<thead>
<tr>
<th>Schedule Objective</th>
<th>Target Date</th>
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</thead>
<tbody>
<tr>
<td>City Team Identified</td>
<td>Q3 2017</td>
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<tr>
<td>Project Development Begins</td>
<td>Q4 2017</td>
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<tr>
<td>Preliminary Permitting Plan Developed</td>
<td>Q3 2018</td>
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<tr>
<td>ST3 Board Identifies Preferred Alternative</td>
<td>Q1/Q2 2019</td>
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</table>

Preliminary Permitting Plan Updated: 2019
Record of Decision & ST3 Board Selects Project to be Built: 2022
Final Permitting Plan Developed: 2022
Construction Begins: 2025
Revenue Service to West Seattle: 2030
Revenue Service to Ballard: 2035
What is a preferred alternative?

➤ SEPA / NEPA term

➤ Makes clear to public *where project is headed*

➤ “Preference” among alternatives to be considered

➤ *Not a final decision* or obligation

➤ Board to also identify *other DEIS alternatives* in coordination with FTA
# Community engagement and collaboration

<table>
<thead>
<tr>
<th>LEVEL 1 Alternatives Screening</th>
<th>LEVEL 2 Alternatives Screening</th>
<th>LEVEL 3 Alternatives Screening</th>
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<tr>
<td><strong>2018</strong></td>
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<td><strong>2019</strong></td>
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<td><strong>JAN</strong></td>
<td><strong>FEB</strong></td>
<td><strong>MAR</strong></td>
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<td>Community Updates</td>
<td>Early Scoping Period</td>
<td>Community Update</td>
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<tr>
<td>Community Updates</td>
<td>Early Scoping Open Houses</td>
<td>Community Update</td>
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<td>Community Updates</td>
<td>(multiple locations)</td>
<td>Community Update</td>
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<tr>
<td>Community Updates</td>
<td>Multiple Locations</td>
<td>Multiple Locations</td>
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<tr>
<td>Community Updates</td>
<td>Level 1 Recommendation</td>
<td>Level 2 Recommendation</td>
</tr>
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<td>EIS Scoping Open Houses</td>
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<td>Recommendation</td>
<td>Identification of Preferred</td>
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<td>Alternative and other</td>
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<tr>
<td>Community Updates</td>
<td></td>
<td>alternatives to study in the</td>
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</table>

Meeting dates subject to change.
External engagement overview

During Alternatives Development Phase: Jan 2018 – April 2019

- 5,600+ comments and questions
- 25 email updates
- 26 fairs, festivals, tabling events
- 17 open houses, forums, workshops
- 189 community briefings
- 14 Stakeholder Advisory Group meetings
- 7 Elected Leadership Group meetings
- 3 online open houses
Screening process

Level 1: Broad range of initial alternatives

Level 2: Refine remaining alternatives

Level 3: Further evaluation

EIS: Preferred Alternative(s) and other EIS alternatives
EIS alternatives

Identification of EIS alternatives informed by:

• Technical *evaluation results*

• *Public feedback* gathered during scoping period and documented throughout the year

• *Racial Equity Toolkit*, including findings from evaluation results and community input
Level 3 alternatives
Summary of Level 3 alternatives

ST3 Representative Project

West Seattle Elevated/ C-ID 5th Ave/ Downtown 6th Ave/ Ballard Elevated

• C-ID station options: 5th Ave Cut-and-Cover and 5th Ave Mined

West Seattle Tunnel/ C-ID 4th Ave/ Downtown 5th Ave/ Ballard Tunnel

• Junction station options: 41st Ave, 42nd Ave and 44th Ave
• C-ID station options: 4th Ave Cut-and-Cover and 4th Ave Mined
• Ballard station options: 14th Ave and 15th Ave
ST3 Representative Project
Summary of Level 3 alternatives

ST3 Representative Project

West Seattle Elevated/ C-ID 5th Ave/ Downtown 6th Ave/ Ballard Elevated

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- Ballard station options: 14th Ave and 15th Ave
West Seattle Elevated/ C-ID 5th Ave/ Downtown 6th Ave/ Ballard Elevated

- Alaska Junction elevated station oriented north/south
- Delridge Station further south
- 6th Avenue route through downtown
- Chinatown/ID station options:
  - 5th Ave Bored Tunnel/ Cut and Cover Station
  - 5th Ave Bored Tunnel/ Mined Station
- Smith Cove Station near Galer St
- Interbay Station at 17th/Thorndyke
- High level fixed bridge at 14th Ave
- At grade along E-3 Busway
- Terry/Mercer route in South Lake Union
Summary of Level 3 alternatives

• ST3 Representative Project

• West Seattle Elevated/ C-ID 5th Ave/ Downtown 6th Ave/ Ballard Elevated
  • C-ID station options: 5th Ave Cut-and-Cover and 5th Ave Mined

• West Seattle Tunnel/ C-ID 4th Ave/ Downtown 5th Ave/ Ballard Tunnel
  • Junction station options: 41st Ave, 42nd Ave and 44th Ave
  • C-ID station options: 4th Ave Cut-and-Cover and 4th Ave Mined
  • Ballard station options: 14th Ave and 15th Ave
Junction tunnel station options
• 41st Ave
• 42nd Ave
• 44th Ave

Delridge Station further south and west

North crossing of Duwamish

At grade along E-3 Busway

Chinatown/ID station options
• 4th Ave Cut and Cover Tunnel and Station
• 4th Ave Bored Tunnel/ Mined Station

South Lake Union Station on Harrison

Interbay Station at 17th/Thorndyke

Ballard tunnel station options
• 14th Ave
• 15th Ave

West Seattle Tunnel/ C-ID 4th Ave/ Downtown 5th Ave/ Ballard Tunnel
Level 3 evaluation
## Preliminary Purpose and Need

<table>
<thead>
<tr>
<th>Purpose Statement</th>
<th>Symbol</th>
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<tbody>
<tr>
<td>Provide high quality rapid, reliable, and efficient peak and off-peak LRT service to communities in the project corridors as defined in ST3.</td>
<td>![Train, Person, Bus]</td>
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<tr>
<td>Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet the projected transit demand.</td>
<td>![Train Station]</td>
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<tr>
<td>Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit’s <em>Regional Transit Long-Range Plan</em>.</td>
<td>![Location]</td>
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<tr>
<td>Implement a system that is consistent with the <em>ST3 Plan</em> that established transit mode, corridor, and station locations and that is technically feasible and financially sustainable to build, operate, and maintain.</td>
<td>![Gears]</td>
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<tr>
<td>Expand mobility for the corridor and region’s residents, which include transit dependent, low income, and minority populations.</td>
<td>![People]</td>
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<tr>
<td>Encourage equitable and sustainable urban growth in station areas through support of transit-oriented development, station access, and modal integration in a manner that is consistent with local land use plans and policies.</td>
<td>![Building]</td>
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<td>Preserve and promote a healthy environment and economy by minimizing adverse impacts on the natural, built and social environments through sustainable practices.</td>
<td>![Recycle]</td>
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</tbody>
</table>
Evaluation criteria

17 criteria consistent in all levels of evaluation

- Reliable service
- Travel times
- Regional connectivity
- Transit capacity
- Projected transit demand
- Regional centers served
- ST Long-Range Plan consistency
- ST3 consistency
- Technical feasibility
- Financial sustainability
- Historically underserved populations
- Station area land use plan consistency
- Modal integration
- Station area development opportunities
- Environmental effects
- Traffic operations
- Economic effects
Evaluation measures

- 50+ quantitative and/or qualitative measures
- Ratings for Lower, Medium and Higher performing
- Key differentiators and considerations among alternatives
- Findings focus on key decisions along corridor
Comparative estimates

Purpose: To *inform comparison* of Level 3 alternatives

*Comparative estimates* for end-to-end alternatives

- Consistent methodology (2018$; construction, real estate, etc.)
- Based on limited conceptual design (less than 5% design)
- Does not establish project budget

*Project budget* established during final design (~ 2024)
Project budget

- **Alternatives Development**
  - Comparative estimates (2019)

- **Environmental Process**

- **Final Design**
  - Establish project budget (2024)

- **Construction**

More design/greater certainty
Provide high quality, rapid, reliable, and efficient peak and off-peak light rail transit service to communities in the project corridors defined in ST3.

At-grade crossings

Potential service interruptions/recoverability

Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet projected transit demand.

Network Integration

Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit’s Regional Transit Long-Range Plan.

Implements a system that is consistent with the ST3 Plan that established transit mode, corridor, and station locations and that is technically feasible and financially sustainable to build, operate, and maintain.

Potential ST3 schedule effects

Potential ST3 operating plan effects

Engineering constraints

Constructability issues

Operational constraints

Capital cost comparison (2018$)

Encourage equitable and sustainable urban growth in station areas through support of transit-oriented development, station access, and modal integration in a manner that is consistent with local land use plans and policies.

Passenger transfers

Equitable development opportunities

Preserve and promote a healthy environment and economy by minimizing adverse impacts on the natural, built and social environments through sustainable practices.

Parks/recreational resource effects (acres)

Water resource effects (acres)

Fish and wildlife habitat effects (acres)

Hazardous materials sites *(1)*

Visual effects to sensitive viewers (miles)

Potentially affected properties

Residential unit displacements

Business displacements (square feet)

Construction impacts

Burden on minority/low-income

Traffic circulation and access effects

Effects on transportation facilities

Effects on freight movement

(1) On properties that overlap with the project footprint

**Key differentiators**

Greater displacements associated with elevated guideway outside of public right of way in West Seattle and Interbay-Ballard

Limited TOD opportunities in West Seattle and Ballard

Tunnels and 4th Ave S viaduct rebuild could extend construction schedule, add engineering complexity, constructability issues and cost

**Evaluation results**

Greater construction effects with cut-and-cover C-ID tunnel/station
**Segments**

- West Seattle (Avalon/Junction)
- Delridge and Duwamish crossing
- SODO and Chinatown-Int’l District
- Downtown
- Smith Cove-Interbay
- Salmon Bay crossing and Ballard

**Key differentiators** *By segment*
North-south oriented 41st elevated station has more residential effects

More business effects with elevated guideway along Fauntleroy

East-west oriented 41st elevated station complicates future extension south

Less business and residential effects with 41st, 42nd and 44th tunnel stations

Elevated options in Alaska Junction result in higher guideway in Delridge

Key differentiators  West Seattle (Avalon/Junction)
South crossing affects Pigeon Point steep slope and Duwamish Greenbelt

South crossing may displace some water-dependent businesses

Greater TOD potential with North of Genesee station

Better bus access with South of Andover station

Key differentiators Delridge and Duwamish crossing

North crossing may displace some water-dependent businesses

South crossing affects Pigeon Point steep slope and Duwamish Greenbelt

Better bus access with South of Andover station

Greater TOD potential with North of Genesee station

South crossing -

North crossing +$300M

Comparative estimates greater than ST3 Representative Project are shown in italics
Does not facilitate track interconnections

Most construction effects along 5th Ave in CID

Property effects at tunnel portal in SODO

Easier access and transfers for 4th and 5th Ave shallow station options

4th Ave deep station alignment displaces Ryerson Base

Construction traffic effects due to 4th Ave viaduct demolition

Potential schedule delay with 4th Ave station options

**Key differentiators:** SODO and Chinatown-ID

<table>
<thead>
<tr>
<th></th>
<th>5th Ave shallow (ST3)</th>
<th>5th Ave shallow station</th>
<th>5th Ave deep station</th>
<th>4th Ave shallow station</th>
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<td>-</td>
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<td>+$300M</td>
<td>+$500M</td>
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</table>

Comparative estimates greater than ST3 Representative Project are shown in italics.
Key differentiators **Downtown**

- More station entrance options on 5th Ave
- Higher ridership and better bus/ped access on Harrison
- Property effects at portal location on Republican
- Constrained ROW on Republican
- Higher ROW cost on Mercer
- Conflicts with SR99 off ramp and sewer on Republican
- Poor soils, landslide hazard area

Comparative estimates greater than ST3 Representative Project are shown in italics
Key differentiators **Smith Cove-Interbay**

- Access to Expedia via Helix ped bridge at Prospect St stations
- Access to Expedia via overpass at Galer St
- Landslide hazard area and greenbelt
- Poor soils; affects pump station, bridge

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<tr>
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<th>Cost Impact</th>
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<tr>
<td>Prospect St station</td>
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<td>Galer St station</td>
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<tr>
<td>Prospect St station</td>
<td>+$200M</td>
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</table>

Comparative estimates greater than ST3 Representative Project are shown in italics.
Ave station location is closer to center of urban village

14th Ave station location allows for better bus integration

Movable bridge has most in-water effects; most affects Fishermen’s terminal

High fixed bridge has some maritime business effects

Tunnels avoid in-water and maritime business effects

Less property effects on 14th Ave

Movable bridge crossing / Elevated station at 15th

Fixed bridge crossing / Elevated station at 14th

Tunnel crossings / Tunnel stations at 14th or 15th

Comparative estimates greater than ST3 Representative Project are shown in italics

Salmon Bay crossing and Ballard

Key differentiators
EIS Scoping feedback
What is EIS Scoping?

- Part of federal and state environmental review process
- 45-day *public comment period* – Feb. 15 to April 2
- Requested public *feedback on scope of EIS*
  - Range of alternatives
  - Purpose and need
  - Topics to study
  - *Informs Board identification* on what to study in EIS*

* Scope of EIS also subject to Federal Transit Administration (FTA) oversight
Scoping overview

- Scoping: Feb. 15 to April 2
- Notification via postcards, advertisements, project website, email updates, press releases, social media, agency invitation letters, etc.
- 3 public meetings in Feb/March
- Online open house
- 1 agency meeting
- Other methods to comment
• 475 people attended three public meetings
• 11,700+ unique visitors viewed the online open house
• 6 agencies participated in agency scoping meeting
• 2,700+ total comments received via meetings and other methods
• All comments captured in *Scoping Summary Report*
Scoping feedback

- General comments – i.e., build it faster, plan for 100-year investment, etc.
- Feedback regarding alignments and stations
- EIS topics for evaluation - i.e., construction, environmental justice, neighborhood/ community impacts, TOD/housing
- Concerns regarding property impacts
- Comments regarding third party funding
Scoping feedback West Seattle/Duwamish crossing

Concerns about potential residential displacement and neighborhood impacts in the Junction with elevated alignment and station.

Interest in an alternative along Yancy/Andover corridor that minimizes neighborhood impact.

Mixed opinions on Duwamish Crossing location.

Concern about potential residential displacement and neighborhood impacts in North Delridge.

Mixed opinions about usage of West Seattle Golf Course.

Interest in Pigeon Ridge Tunnel (purple) alignment.

General support for tunnel; Some interest in consolidating Avalon/Alaska Junction stations; General support for Junction station in 41st/42nd vicinity; “Stay out of Junction” if elevated.
Some support for new elevated SODO station and elevating existing station

More support for overpasses at Lander and Holgate to reduce traffic/ped/bike conflicts, but some concerns from adjacent property owners

General support for SODO station closer to Lander for improved access

Interest in seamless transfers at SODO Station, especially with West Seattle interim terminus

Concerns regarding impacts to SODO busway and Metro base facilities

Concern about future traffic and development affecting industrial businesses

General fatigue with construction disruption in SODO, CID and Pioneer Square; requests to evaluate parking, cumulative construction impacts and environmental justice

Scoping feedback SODO
Concerns regarding streetcar impacts during construction.

General support for shallow stations for easier transfers for either 4th or 5th Avenues.

Some support 4th Avenue to improve connections between transit modes and between the C-ID and Pioneer Square, and to limit potential construction impacts in the C-ID neighborhood.

Concerns regarding traffic diversions and parking impacts with 4th Avenue construction.

Interest in creating good transfer environment, activating Union Station and improving public realm.

Some support 5th Avenue for easier access from residences and businesses in the C-ID.

Concern regarding construction impacts on the C-ID community with 5th Avenue alternatives.

Interest in aligning new station construction with other major projects.

Scoping feedback Chinatown-ID
General support for Midtown Station on 5th Ave

Concern about potential residential property impacts of Midtown Station on 5th Ave

Interest in efficient transfers at Westlake Station

General support for SLU Station on Harrison

General support for Denny Station on Westlake south of Denny Way

Concern about impacts on Seattle Streetcar during construction

Interest in improved access to First Hill

Concern about impacts on medical research facilities

More support for Seattle Center Station location at Republican

Interest in good connections to Uptown neighborhood and Seattle Center regardless of station location

Concern about impacts on Seattle Center organizations and facilities

Scoping feedback Downtown
General concern about traffic and freight impacts along Elliott/15th Ave within BINMIC

Support for continuing to study both station locations; interest in access and serving potential future uses around Smith Cove

Support for station at 17th/Thorndyke; interest in good access from Dravus

Little support for movable bridge due to concerns about service reliability and greater potential maritime business, freight, and in-water impacts

Concern about maritime business, freight, and visual effects of elevated crossing and station

More support for tunnel crossing and station; some concerns about tunnel cost

Support for station at 15th as closer to center of urban village

Support for station at 14th to lessen potential property impacts and traffic/freight impacts on 15th

More support for fixed bridge than movable bridge

Interest in station further west in Ballard

Scoping feedback Smith Cove/Interbay/Ballard
Equity & Inclusion

Sound Transit & City of Seattle partnership utilizing the Racial Equity Toolkit (RET)

Working group structure focused on engagement and data analysis

Collaboration to elevate issues and considerations to better inform the alternatives development process

Strive to provide information that data alone cannot provide

What’s next?: Report back to community members and continue engagement through EIS process and EJ analysis
Racial Equity Toolkit

Level 1 Evaluation

- Data analysis showed areas of focus; Chinatown/ID and Delridge
- Determined shared outcomes
- Updated screening criteria

Figure: Concentrated communities of color (non-white population)

Source: 2011-2016 American Community Survey, projected in ArcGIS Online WSBLE Community Conditions Basemap
Racial Equity Toolkit

Level 2 Evaluation

✅ Measured connections, potential impacts and opportunities

✅ Gathered and shared community input

Level 2 RET Memo
September 2018
Chinatown / ID Station

• Limit harmful impacts,
• Maximize connections for all users, and
• 100-year vision for the station.

Delridge Station

• Bus-rail integration; and
• Equitable transit-oriented development serving the community.
Level 3 RET findings

Chinatown / ID Station

Based on the Level 3 evaluation results and community feedback, it is unclear which alternative(s) would pose the greatest net benefit for the unique, multicultural communities that live and work in the surrounding south downtown neighborhoods.

Figure 1: Communities of Color in ½ mile catchment of C/ID and South Downtown

Source: 2011-2016 American Community Survey, projected in ArcGIS Online WSBLE Community Conditions Basemap
**Level 3 RET findings**

**Delridge Station**

Based on the Level 3 evaluation results and community feedback, the Delridge Station included as part of the ST3 Representative project offers the fewest net benefits to communities of color and low-income communities, in terms of bus-rail integration and opportunities to support equitable TOD.

*Figure 2:* Communities of color beyond 1/2-mile catchment of Delridge and Avalon Stations and major bus routes

*Source:* 2011-2016 American Community Survey, projected in ArcGIS Online WSBLE Community Conditions Basemap)
SAG recommendations
Segments with comparative estimates greater than ST3 Representative Project are shown in italics. Estimates not available for “Scoping feedback” suggestions.

<table>
<thead>
<tr>
<th>Segment</th>
<th>ST3 Representative Project</th>
<th>West Seattle Elevated/ C-ID 5\textsuperscript{th} /Downtown 6\textsuperscript{th}/Ballard Elevated</th>
<th>West Seattle Tunnel/ C-ID 4\textsuperscript{th} /Downtown 5\textsuperscript{th}/Ballard Tunnel</th>
<th>Scoping feedback</th>
<th>SAG recommendation</th>
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<tbody>
<tr>
<td>West Seattle (Avalon/Junction)</td>
<td>41\textsuperscript{st} elevated station (east-west oriented)</td>
<td>41\textsuperscript{st} elevated station (north-south oriented)/</td>
<td>41\textsuperscript{st}, 42\textsuperscript{nd}, or 44\textsuperscript{th} tunnel station</td>
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<td>West Seattle (Delridge)</td>
<td>N of Andover station</td>
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<td>N of Genesee station</td>
<td>Pigeon Ridge Tunnel or Yancy/Andover</td>
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<td>Duwamish crossing</td>
<td>South crossing</td>
<td>South crossing</td>
<td>North crossing</td>
<td>Pigeon Ridge Tunnel alignment</td>
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<td>SODO/ Chinatown-ID</td>
<td>E3 elevated / 5\textsuperscript{th} shallow station</td>
<td>E3 at grade / 5\textsuperscript{th} shallow or deep station</td>
<td>E3 at grade / 4\textsuperscript{th} shallow or deep station</td>
<td>Elevate new and existing SODO station</td>
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<td>Downtown</td>
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<td>6\textsuperscript{th} and Mercer</td>
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<td>Smith Cove</td>
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<td>Interbay/ Ballard</td>
<td>Movable bridge with 15\textsuperscript{th} elevated station</td>
<td>High fixed bridge with 14\textsuperscript{th} elevated station</td>
<td>Tunnel with 14\textsuperscript{th} or 15\textsuperscript{th} tunnel station</td>
<td>Tunnel with 20\textsuperscript{th} tunnel station</td>
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Summary of Level 3 alternatives
### SAG Recommendation

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<tr>
<td>West Seattle (Delridge)</td>
<td>N of Genesee station</td>
<td>Pigeon Ridge Tunnel (former purple line)</td>
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<td>South crossing</td>
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<tr>
<td>SODO/Chinatown-ID</td>
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<td>Majority interest in studying all options</td>
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<td>5&lt;sup&gt;th&lt;/sup&gt; and Harrison</td>
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<td>Interbay/Ballard</td>
<td>Tunnel with 15&lt;sup&gt;th&lt;/sup&gt; tunnel station</td>
<td>Tunnel with 20&lt;sup&gt;th&lt;/sup&gt; tunnel station</td>
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**SAG Recommendation:** *If 3<sup>rd</sup> party funding is secured*
SAG Recommendation: If 3rd party funding is secured
## SAG Recommendation

**SAG Recommendation:** *If 3rd party funding not secured*

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<tr>
<td>West Seattle (Junction)</td>
<td>Elevated station with refinements</td>
<td>Interest in a modified ST3 Representative Project Alaska Junction station, oriented North/South staying east of the Alaska Junction</td>
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<tr>
<td>West Seattle (Delridge)</td>
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<td>Smith Cove</td>
<td>Prospect St station</td>
<td>Mixed opinions, with interest in studying fixed bridge and tunnel. No support for movable bridge.</td>
</tr>
<tr>
<td>Interbay/ Ballard</td>
<td>Prospect St station</td>
<td></td>
</tr>
</tbody>
</table>

*Notes:* If 3rd party funding is not secured, the specified segments will be considered for further study and development.
SAG Recommendation: If 3rd party funding not secured
ELG recommendations
### Summary of Level 3 alternatives

<table>
<thead>
<tr>
<th>Segment</th>
<th>ST3 Representative Project</th>
<th>West Seattle Elevated/ C-ID 5th /Downtown 6th/Ballard Elevated</th>
<th>West Seattle Tunnel/ C-ID 4th /Downtown 5th/Ballard Tunnel</th>
<th>Scoping feedback</th>
<th>ELG recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Seattle (Avalon/Junction)</td>
<td>41st elevated station (east-west oriented)</td>
<td>41st elevated station (north-south oriented)/</td>
<td>41st, 42nd, or 44th tunnel station</td>
<td>Pigeon Ridge Tunnel or Yancy/Andover</td>
<td>TBD</td>
</tr>
<tr>
<td>West Seattle (Delridge)</td>
<td>N of Andover station</td>
<td>S of Andover station</td>
<td>N of Genesee station</td>
<td></td>
<td>TBD</td>
</tr>
<tr>
<td>Duwamish crossing</td>
<td>South crossing</td>
<td>South crossing</td>
<td>North crossing</td>
<td>Pigeon Ridge Tunnel alignment</td>
<td>TBD</td>
</tr>
<tr>
<td>SODO</td>
<td>E3 elevated</td>
<td>E3 at grade</td>
<td>E3 at grade</td>
<td>Elevate new and existing SODO station</td>
<td>TBD</td>
</tr>
<tr>
<td>Chinatown-ID</td>
<td>5th shallow station</td>
<td>5th shallow or deep station</td>
<td>4th shallow or deep station</td>
<td></td>
<td>TBD</td>
</tr>
<tr>
<td>Downtown</td>
<td>5th and Republican</td>
<td>6th and Mercer</td>
<td>5th and Harrison</td>
<td>NA</td>
<td>TBD</td>
</tr>
<tr>
<td>Smith Cove</td>
<td>Prospect St station</td>
<td>Galer St station</td>
<td>Prospect St station</td>
<td>NA</td>
<td>TBD</td>
</tr>
<tr>
<td>Interbay/ Ballard</td>
<td>Movable bridge with 15th elevated station</td>
<td>High fixed bridge with 14th elevated station</td>
<td>Tunnel with 14th or 15th tunnel station</td>
<td>Tunnel with 20th tunnel station</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Segments with comparative estimates greater than ST3 Representative Project are shown in italics. Estimates not available for “Scoping feedback” suggestions.
<table>
<thead>
<tr>
<th>Segment</th>
<th>Recommendation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Seattle (Avalon/ Junction)</td>
<td>41st or 42nd tunnel station Elevated station with refinements</td>
<td>No support for the orange Alaska Junction Station option. Recommended an elevated to study but more support for tunnel.</td>
</tr>
<tr>
<td>West Seattle (Delridge)</td>
<td>Station north of Genesee with refinements</td>
<td></td>
</tr>
<tr>
<td>Duwamish crossing</td>
<td>South crossing</td>
<td></td>
</tr>
<tr>
<td>SODO</td>
<td>E3 at grade</td>
<td></td>
</tr>
<tr>
<td>Chinatown-ID</td>
<td>Majority interest to study all options</td>
<td></td>
</tr>
<tr>
<td>Downtown</td>
<td>5th and Harrison</td>
<td>Study both 5th and 6th Ave alignments through Westlake and Midtown Stations</td>
</tr>
<tr>
<td>Smith Cove</td>
<td>Prospect St station High fixed bridge with 14th elevated station</td>
<td>No support for movable bridge. Recommended an elevated to study but more support for tunnel.</td>
</tr>
<tr>
<td>Interbay/ Ballard</td>
<td>Tunnel with 14th or 15th tunnel station</td>
<td></td>
</tr>
</tbody>
</table>
Interbay/ Ballard

- General support for tunnel option across Salmon Bay
- Interest in continuing to study the fixed bridge in the DEIS as an elevated alternative to the tunnel option
- Potential refinements to the Ballard Station should optimize bus/rail integration and access to the Ballard urban village (such as improved connections across 15th Avenue NW)
- Mixed opinions about the new Tunnel with 20th tunnel station option and requests for more information to inform Sound Transit Board discussions – concerns about potential disruption to the neighborhood and feasibility, but interest in serving Ballard further west with a tunnel
Smith Cove

✓ Interest in Smith Cove Station at Galer Street to better serve potential future development, connect to the Port’s cruise terminals, and reduce costs

Downtown

✓ Given broad community support, study the 5th Harrison (blue) alignment, understanding there may be design refinements

✓ Study 5th and 6th Avenues from Westlake through Midtown Stations, looking for opportunities to optimize transfers and bus integration with Madison BRT
Chinatown-ID

- Based on community feedback and technical work so far, interest in advancing all alternatives for the C-ID station and activating union station
- Concern with potential impacts to Ryerson Base and bus operations
- Concern about deep stations and long-term operational impacts (relying on elevators with a large volume of transfers)
- Balance near-term construction impacts with long term operations
ELG Level 3 Recommendation Discussion

**SODO**

- Questions about two elevated stations option at SODO
- Support for E3 at grade with vehicle overpasses, being mindful of impacts to adjacent property owners
- Need to continue to examine the impact to bus transit currently using the E3 busway
**ELG Level 3 Recommendation Discussion**

**Duwamish Crossing**

✅ Questions about the need for studying the north crossing in the DEIS as a 4f avoidance alternative

**Delridge**

✅ Some interest to explore a refined south crossing that includes a tunnel through Pigeon Point, with a further south Delridge station location and reduced neighborhood residential impacts; requests for more information to inform Sound Transit Board discussions

✅ Interest in refining the blue station location, prioritizing further south location and looking for opportunities to minimize residential impacts, create a high quality transfer environment, optimize TOD potential and reduce costs

✅ Interest in exploring a Yancy/Andover alignment to minimize neighborhood impacts with a Delridge Station serving Youngstown
West Seattle (Avalon and Alaska Junction)

- Support for retaining Avalon Station, but continue to evaluate potential cost savings opportunities including consolidating stations and implications for ridership
- Support for looking for opportunities to minimize community impacts and create high quality transfer environment for both Avalon and Alaska Junction station locations
- Support for underground alignment to support TOD potential
- Support for a modified ST3 Representative project (Alaska Junction station oriented North/South and staying east of the Alaska Junction on Fauntleroy or in the vicinity of Jefferson Square)
General Feedback

- Discussion about process and recommendations to the Sound Transit Board: mixed opinions about making recommendations on two alternatives, one if third party funding is secured and one if third party funding is not secured.

- Discussion of need to look at potential sources of third party funding if project elements beyond the scope of the ST3 Representative project are carried forward; some interest in establishing a working group to consider third party funding.

- Interest in further refinements and evaluation before identifying sources of third party funding.
ELG Recommendations West Seattle/Duwamish

Station north of Genesee with refinements

Elevated station with refinements

41st or 42nd tunnel

South crossing
ELG Recommendations SODO/Chinatown-ID

Majority interest to study all options
ELG Recommendations Downtown

5th and 6th from Midtown through Westlake

5th and Harrison
Galer St station

Prospect St station

Tunnel with 14th or 15th tunnel station

High fixed bridge with 14th elevated station

ELG Recommendations Interbay/Ballard
West Seattle elevated and tunnel options

Smith Cove station options

CID station options

Ballard elevated and tunnel options

Midtown to Westlake alignment options

ELG Recommendations Summary
<table>
<thead>
<tr>
<th>Segment</th>
<th>ST3 Representative Project</th>
<th>ELG recommendations (low estimate)</th>
<th>ELG recommendations (high estimate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Seattle (Avalon/Junction)</td>
<td>41st elevated station (east-west oriented)</td>
<td>Elevated station with refinements ($+0)</td>
<td>41st, 42nd tunnel station ($+700M)</td>
</tr>
<tr>
<td>West Seattle (Delridge)</td>
<td>N of Andover station</td>
<td>Station north of Genesee with refinements ($+0)</td>
<td>Station north of Genesee with refinements ($+0)</td>
</tr>
<tr>
<td>Duwamish crossing</td>
<td>South crossing</td>
<td>South crossing ($+0)</td>
<td>South crossing ($+0)</td>
</tr>
<tr>
<td>SODO/CID</td>
<td>E3 elevated / 5th shallow station</td>
<td>E3 at grade / 5th shallow ($-200M) or deep station ($+0)</td>
<td>E3 at grade / 4th shallow ($+300M) or deep station ($+500M)</td>
</tr>
<tr>
<td>Downtown</td>
<td>5th and Republican</td>
<td>5th and Harrison ($+0)</td>
<td>5th and Harrison ($+0)</td>
</tr>
<tr>
<td>Smith Cove</td>
<td>Prospect St station</td>
<td>Galer St station ($+100M)</td>
<td>Prospect St station ($+200M)</td>
</tr>
<tr>
<td>Interbay/ Ballard</td>
<td>Movable bridge with 15th elevated station</td>
<td>High fixed bridge with 14th elevated station ($+100M)</td>
<td>Tunnel with 14th or 15th tunnel station ($+350M)</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>+$0 to +$200M</td>
<td>+$1,550M to +$1,750M</td>
</tr>
</tbody>
</table>

Segments with comparative estimates greater than ST3 Representative Project are shown in italics.
Does not include alternatives suggested during EIS Scoping as comparative estimates are not available.

ELG Recommendations
Comparative estimates
Next steps
Environmental Review Phase

**PLANNING**
2017–2022

- Alternatives development 2017–2019
  - Early scoping
  - Scoping
  - ST Board identifies preferred alternative and other alternatives

Environmental Review 2019–2022
- Draft Environmental Impact Statement
- Final Environmental Impact Statement
- ST Board selects project to be built
- Federal Record of Decision

**DESIGN**
2022–2026*

- Final route design
- Final station designs
- Procure and commission station and public art
- Obtain land use and construction permits
- Property acquisition/relocation

**CONSTRUCTION**
2025–2035*

- Groundbreaking
- Construction updates and mitigation
- Safety education
- Testing and preoperations

START OF SERVICE
West Seattle: 2030
Ballard: 2035

PUBLIC INVOLVEMENT

PUBLIC INVOLVEMENT / TESTING

VOTER APPROVAL 2016
Environmental Review

- EIS kickoff
- Conceptual Engineering
- Develop DEIS
- Station planning activities
- Publish DEIS and public comment period

ST Board confirms or modifies PA
West Seattle & Ballard Link Extensions
DSTT Capital Improvements

Motion No. M2019-52

Contract modification with HNTB Corporation

9 May 2019
Contract Modification

- Motion No. M2017-119 Authorized Contract with HNTB

- Option to modify contract for each phase of project development

Scope

- Phase 1: Alternatives Development – complete
- Phase 2: Draft EIS and Conceptual Engineering – this action
- Phase 3: Final EIS and Preliminary Engineering
Phase 2 Scope

- Draft EIS analysis and related design support
- Advanced conceptual engineering and geotechnical analysis
- Station planning and urban design
- Permit streamlining, agency coordination
- Community outreach and engagement
- Study of potential improvements to existing Westlake Station
West Seattle & Ballard Link Extensions: Authorized Project Allocation $285.9M

Uncommitted $250.8M

Preliminary Engineering $27.1M

Agency Administration and Third Party $8M

Approved

Today’s Action

Future Action
West Seattle & Ballard Link Extensions: Board Approves Contract Amendment

Total contract $60.3M

- Project Development: $285.9M
- Const.: $285.9M

Uncommitted $190.9M

Preliminary Engineering $27.1M
Preliminary Engineering $59.9M
Agency Administration and Third Party $8M
**DSTT Capital Improvements:** Authorized Project Allocation $10M

### Allocation vs. Commitments

- **Project Development:** $10M
- **Uncommitted:** $9.71M
- **Agency Administration and Preliminary Engineering:** $0.29M

**Illustrative - Not to Scale**
DSTT Capital Improvements: Board Approves Contract Amendment $0.4M (Total contract $60.3M)

ALLOCATION $  COMMITMENTS

Const.  F/D

Project Development

Uncommitted $9.31M

Final Design $0.4M
Agency Administration and Preliminary Engineering $0.29M

2019  2020

Approved   Today’s Action   Future Action
Third party funding
Initial observations: Yancy/Andover

- Potential greater effects to properties along Andover/Yancy and Avalon
- Reduces impacts to Youngstown neighborhood, Parks and Golf Course
- High guideway on Avalon and Andover/Yancy increases visual effects
- Potentially greater industrial businesses and truck access effects
- Higher Delridge station farther north from community center and challenging station access and transit integration; Constrained and challenging site for ETOD
- Potentially greater effects to Youngstown neighborhood, Parks and Golf Course
Initial observations: Pigeon Point Tunnel

- Avoids Pigeon Point steep slope constraints.
- Lower height Delridge Station farther south better serves community; better station access and transit integration; Less ETOD opportunity (than blue).
- Longer tunnel (than purple) through steep and unstable slopes – has engineering and constructability challenges.
- Potential residential effects at both tunnel portals in Pigeon Point neighborhood.
- Potentially more challenging 4(f) and permit processes than ST3 Representative Project due to bisecting park and habitat.
- Fewer curves may potentially have operational benefits.
- Potential increased effects to the marinas.
Potential deeper tunnel station to avoid large-diameter utilities under Shilshole Ave

Station more centrally located within Ballard urban village

Proposed portal location does not meet grades and clearances

Portal shifted north affects large-diameter utilities and maritime properties; potentially need fill within Salmon Bay to maintain cover over tunnel

Portal shifted south lengthens tunnel and affects BNSF railyard

Potentially greater property effects, displacement, and construction effects in Ballard core

Initial observations 20th Tunnel