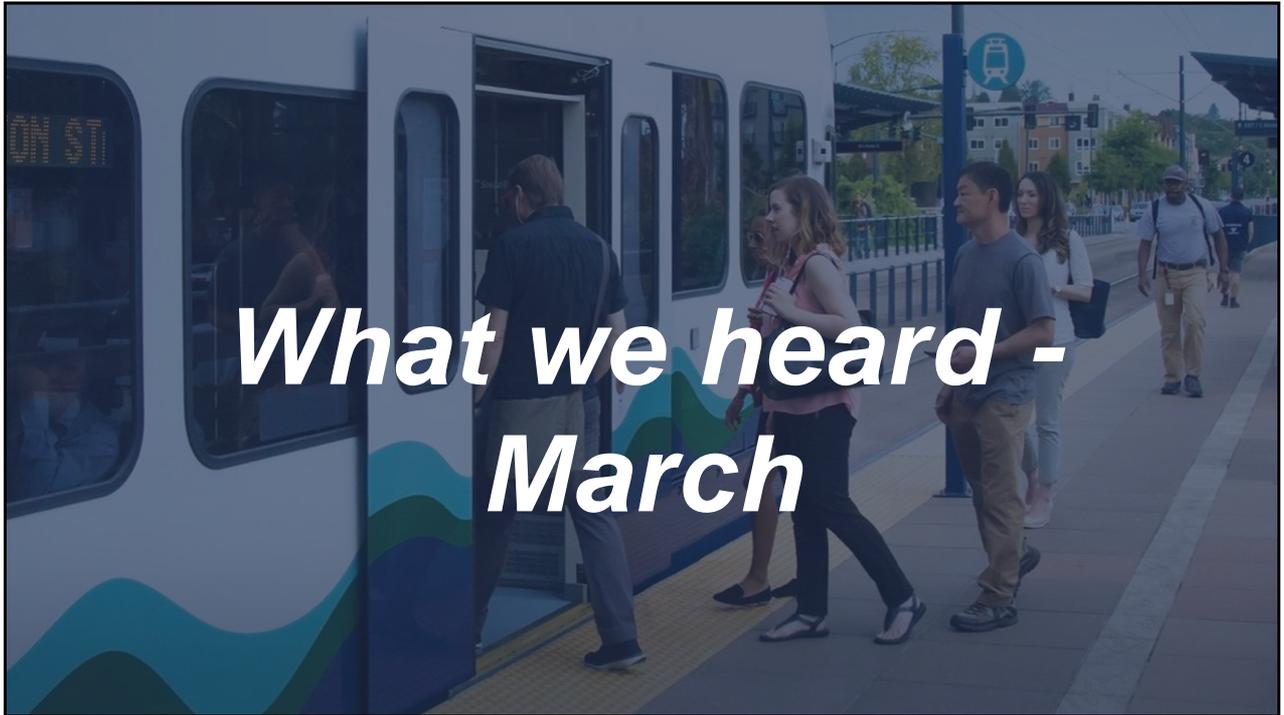




Agenda

- › *Welcome & Introductions*
- › *Previous Meeting Summary*
- › *What We Heard – March*
- › *Alternatives Development Process*
- › *Level 1 Alternatives Evaluation Results*
- › *Next Steps & Next Meeting*



What we heard - March



Early Scoping Summary
Report

April 2018

 SOUNDTRANSIT

Early Scoping Summary Report

- Early scoping: Feb. 2 – March 5
- 3 public meetings, 1 agency meeting and online open house
- 2,800+ total comments received via meetings and other methods
- All comments captured in *Early Scoping Summary Report*

External Engagement Report: March 2018



524 comments / questions



1 Tweet engaging more than **81,000** users



3 email updates engaging more than **3,380** subscribers



1 Facebook boosted post engaging more than **29,500** users



1 Stakeholder Advisory Group meeting



1 online open house engaging more than **1,886** visitors



9 community briefings

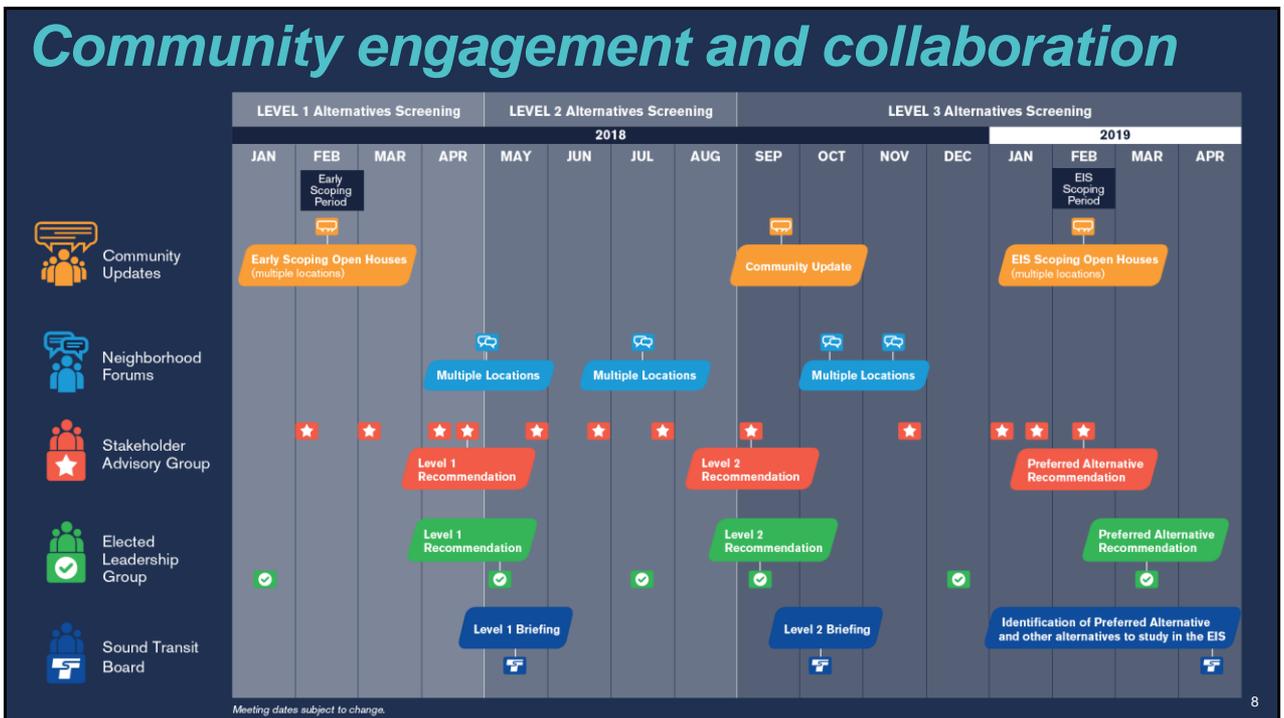


Neighborhood forums Spring Schedule

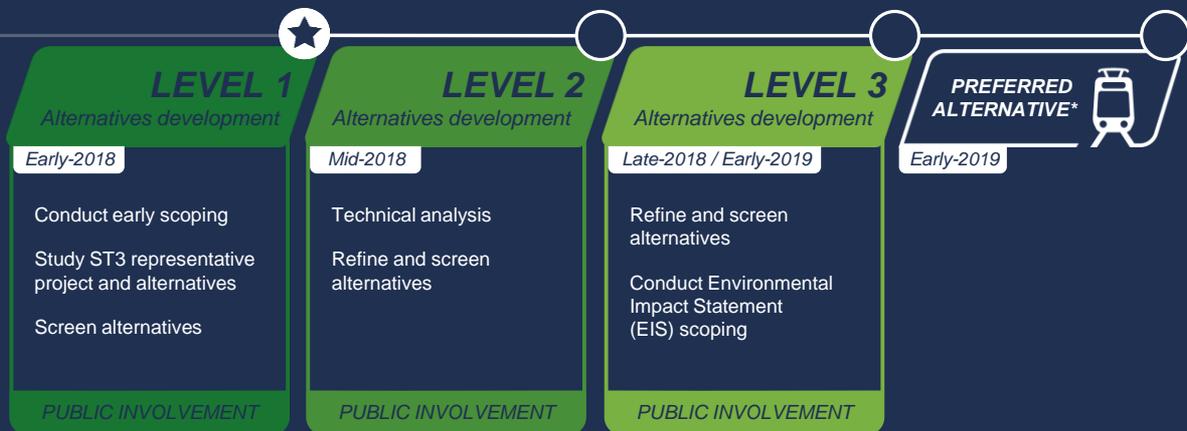
- 4/21: Chinatown / Int'l District
- 4/23: Denny / SLU / Seattle Center
- 5/2: Midtown / Westlake
- 5/5: Delridge / Avalon / Alaska Junction
- 5/9: SODO / Stadium
- 5/12: Ballard / Interbay / Smith Cove



Community engagement and collaboration



Alternatives development process



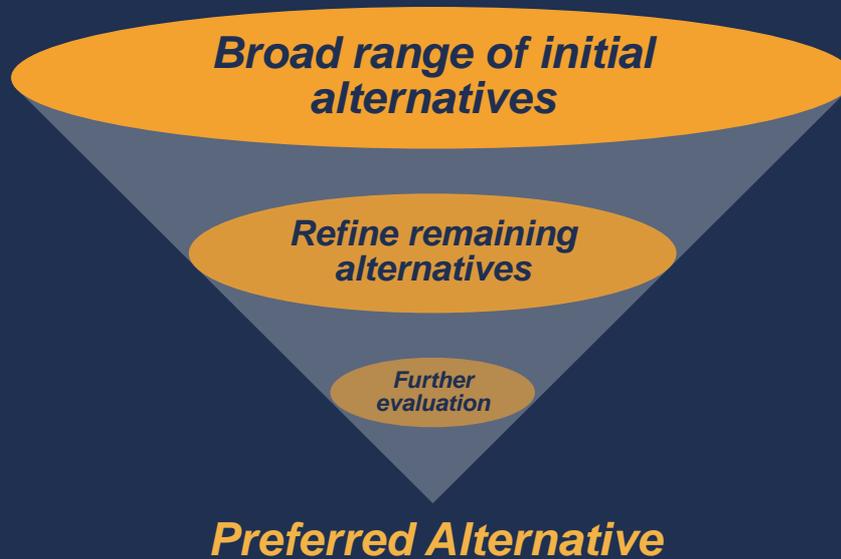
*The Sound Transit Board identifies preferred alternatives and other alternatives to study.

Where we're going

Getting to a Level 1 recommendation

- Today's meeting, **April 17th** – **Learn** about the Level 1 alternatives and evaluation results
- Next meeting, **April 24th** – Collectively **make recommendations** that will be shared with the Elected Leadership Group and Sound Transit Board

Screening process



Purpose and need

- Provide high quality rapid, reliable, and efficient peak and off-peak light rail transit service to communities in the **project** corridors **defined in ST3**.
- Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet projected transit demand.
- Connect regional **growth** centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit's Regional Transit Long-Range Plan.
- Implement 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.
- Expand mobility for the corridor and region's residents, which include transit dependent, low income, and minority populations.
- 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**.
- Preserve and promote a healthy environment **and economy** by minimizing adverse impacts on the natural, built **and social** environments through sustainable practices.

Evaluation criteria

- Reliable service
- Travel times
- Regional connectivity
- Transit capacity
- Projected transit demand
- Regional ~~growth~~ 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 (new)**

Purpose and need



Provide high quality rapid, reliable and efficient peak and off-peak light rail transit service to communities in the *project* corridors *defined in ST3*

Level 1 criteria and measure

Reliable service

- *Potential service interruptions and recoverability*

Travel times

- *Light rail travel times*

Purpose and need



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

Level 1 criteria and measure

Regional connectivity

- *Network integration and operational flexibility to meet future demand*

Projected transit demand

- *Ridership potential*

Transit capacity

- *Passenger carrying capacity in downtown*

15

Purpose and need



Connect regional ~~growth~~-centers as described in adopted regional and local land use, transportation and economic development plans and Sound Transit's Long-Range Plan

Level 1 criteria and measure

Regional centers served

- *Station proximity to PSRC-designated regional centers*

Sound Transit Long-Range Plan consistency

- *Accommodates future light rail extensions beyond ST3*

16

Purpose and need



Implement 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

Level 1 criteria and measures

ST3 consistency

- *Mode, route and general station locations per ST3*
- *Potential operating plan effects*

Financial sustainability

- *Qualitative capital cost comparison*

Technical feasibility

- *Engineering constraints*
- *Constructability issues*
- *Operational constraints*

17

Purpose and need



Expand mobility for the corridor and region's residents, which include transit dependent, low income and minority populations

Level 1 criteria and measure

Historically underserved populations

- *Opportunities for historically underserved populations*

18

Purpose and need



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*

Level 1 criteria and measures

Station area land use plan consistency

- *General station locations consistent with local land use plans*
- *Station proximity to Seattle-designated urban centers / villages*

Station area development opportunities

- *Development potential*

Modal integration

- *Bus / rail and rail / rail integration*
- *Bicycle, pedestrian and persons with limited mobility connectivity*

19

Purpose and need



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

Level 1 criteria and measure

Environmental effects

- *Protected natural resources*
- *Protected built *and social* environment*
- *Burden on historically underserved populations*

Economic effects

- *Freight movement and access on land and water*
- *Business and commerce effects*

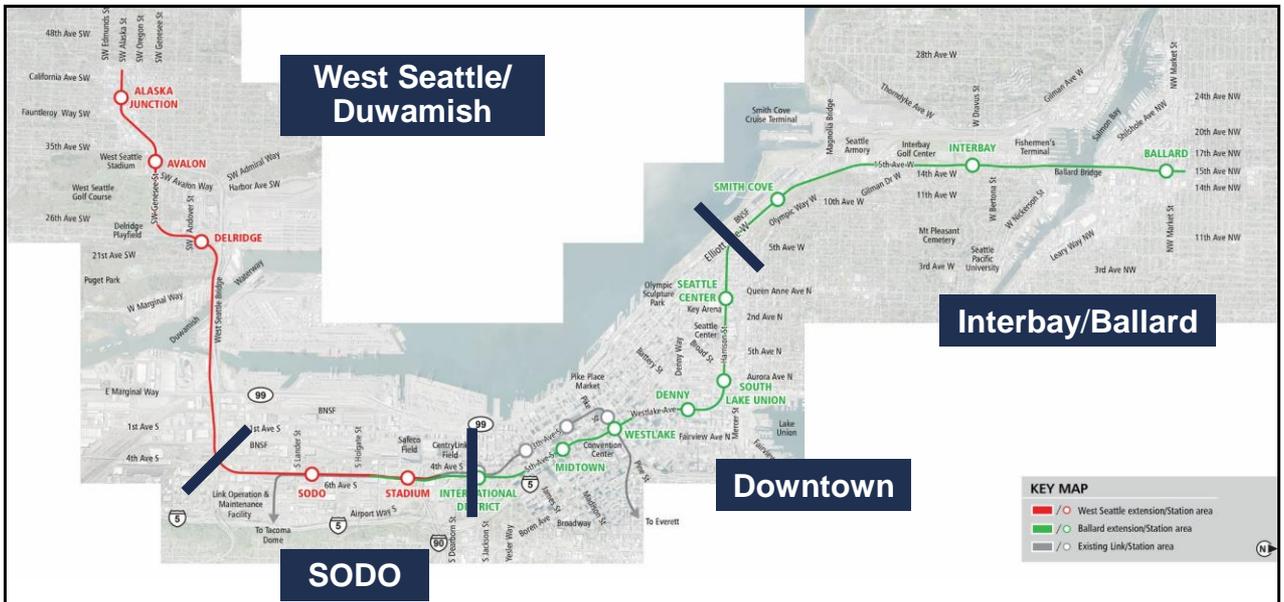
Traffic operations

- *Traffic circulation and access*

20

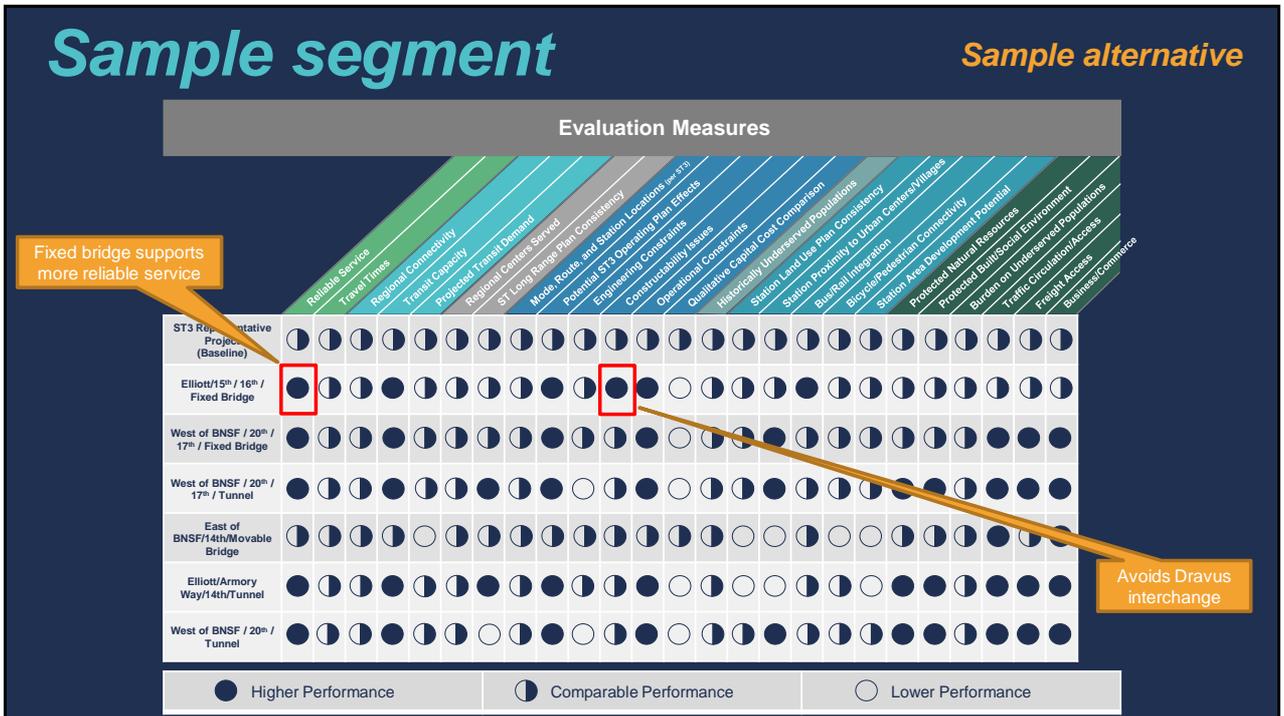


Level 1 alternatives evaluation



ST3 Representative Project

Study segments



Sample segment summary

Alternatives with more potential	ST3 Representative Project	<ul style="list-style-type: none"> • Baseline for comparison
	Elliott/15 th /16 th /Fixed Bridge	<ul style="list-style-type: none"> • Avoids 15th Ave/Dravus interchange • Supports more reliable service
	Alternative	<ul style="list-style-type: none"> • Key findings
Alternatives with greater challenges	Alternative	<ul style="list-style-type: none"> • Key findings
	Alternative	<ul style="list-style-type: none"> • Key findings
Not practical suggestions	Alternative	<ul style="list-style-type: none"> • Key findings
	Alternative	<ul style="list-style-type: none"> • Key findings

25



Sample segment
Key Level 1 findings - Sample alternative

- Map of alternative



- Evaluation measures

Sample segment summary

Alternatives with more potential	ST3 Representative Project	<ul style="list-style-type: none"> • Baseline for comparison • Avoids 15th Ave/Dravus interchange • Supports more reliable service and bridge openings
Alternatives with greater challenges	Alternative	<ul style="list-style-type: none"> • Key findings
	Alternative	<ul style="list-style-type: none"> • Key findings
Not practical suggestions	Alternative	<ul style="list-style-type: none"> • Key findings
	Alternative	<ul style="list-style-type: none"> • Key findings

- Segment summary



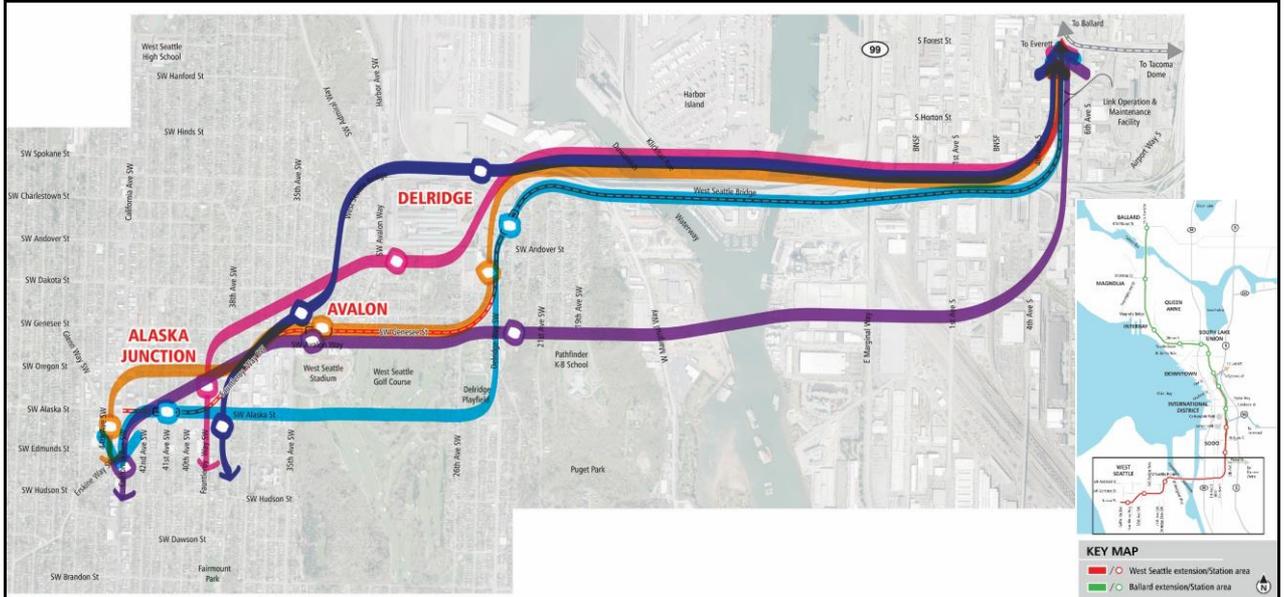
- Small Group Discussion

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Level 1 alternatives

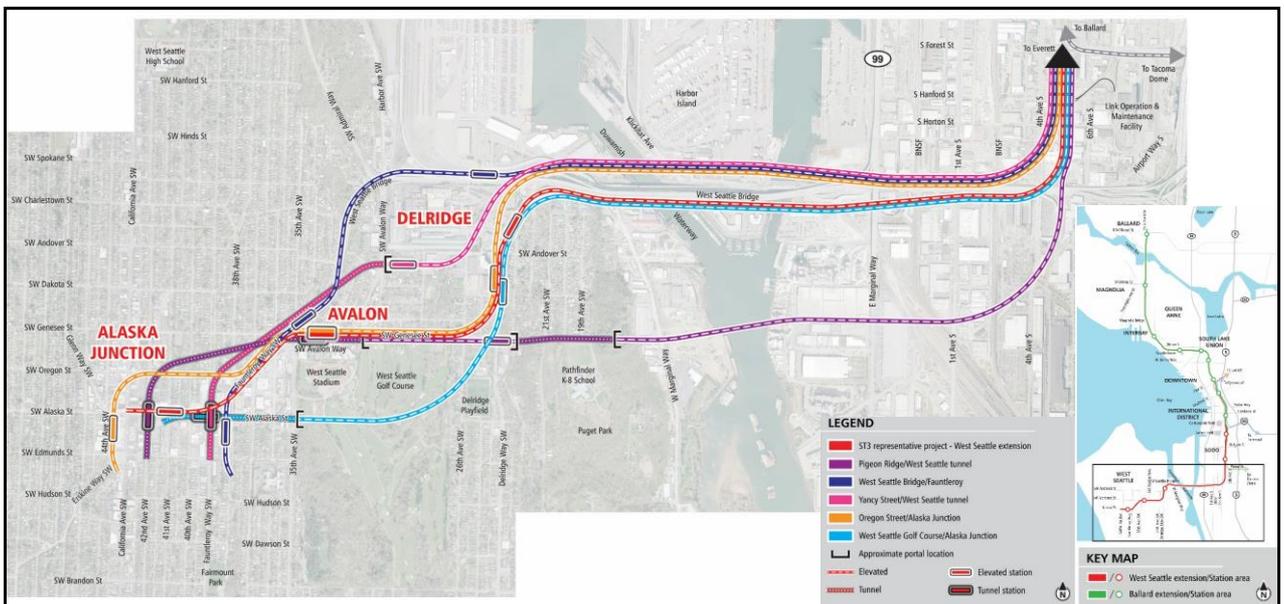
West Seattle/Duwamish

- ST3 Representative Project
- Pigeon Ridge/West Seattle Tunnel
- West Seattle Bridge/Fauntleroy
- Yancy Street/West Seattle Tunnel
- Oregon Street/Alaska Junction
- West Seattle Golf Course/Alaska Junction



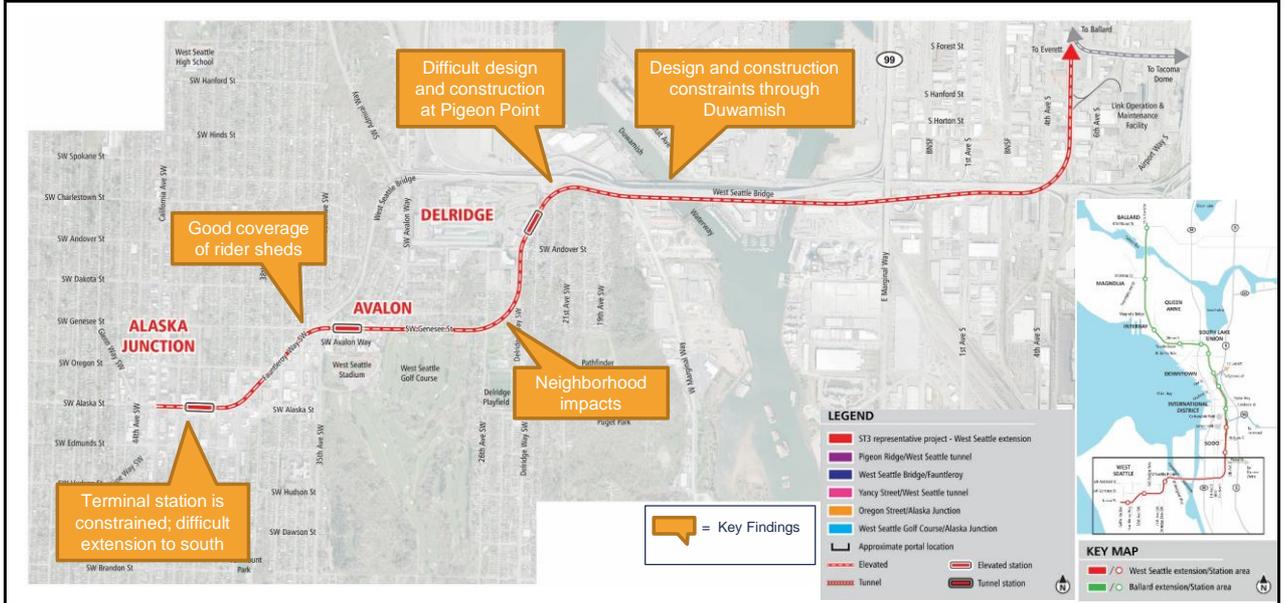
West Seattle/Duwamish

Early scoping feedback



West Seattle/Duwamish

Level 1 alternatives



West Seattle/Duwamish

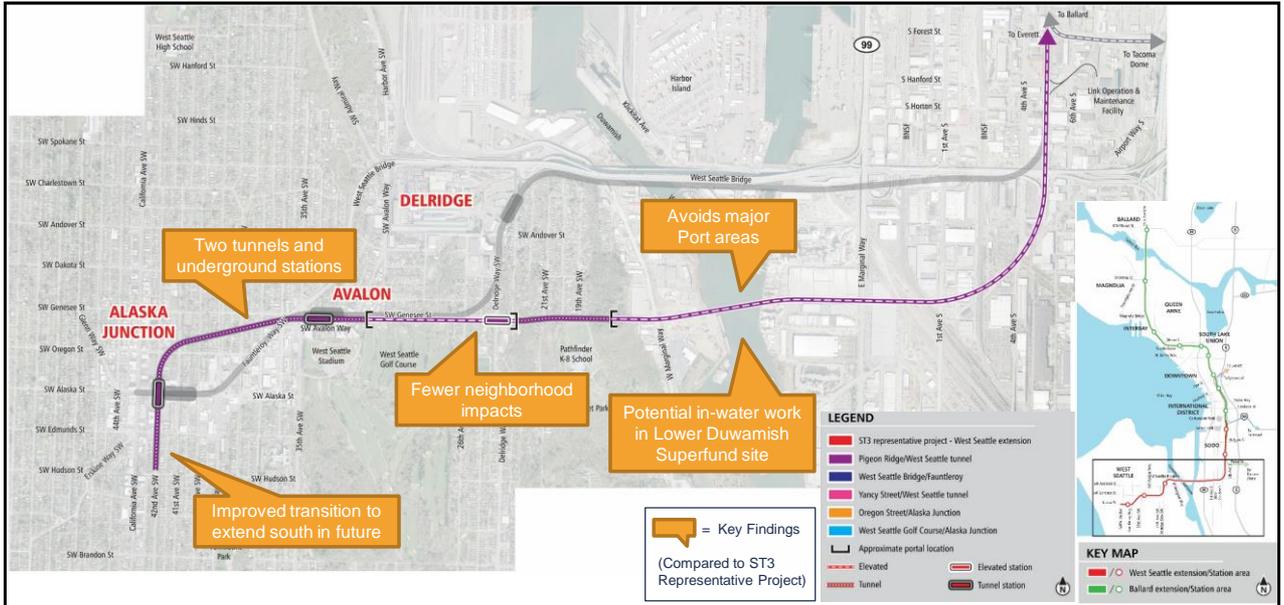
Key Level 1 findings – ST3 Representative Project

West Seattle/Duwamish

ST3 Representative Project

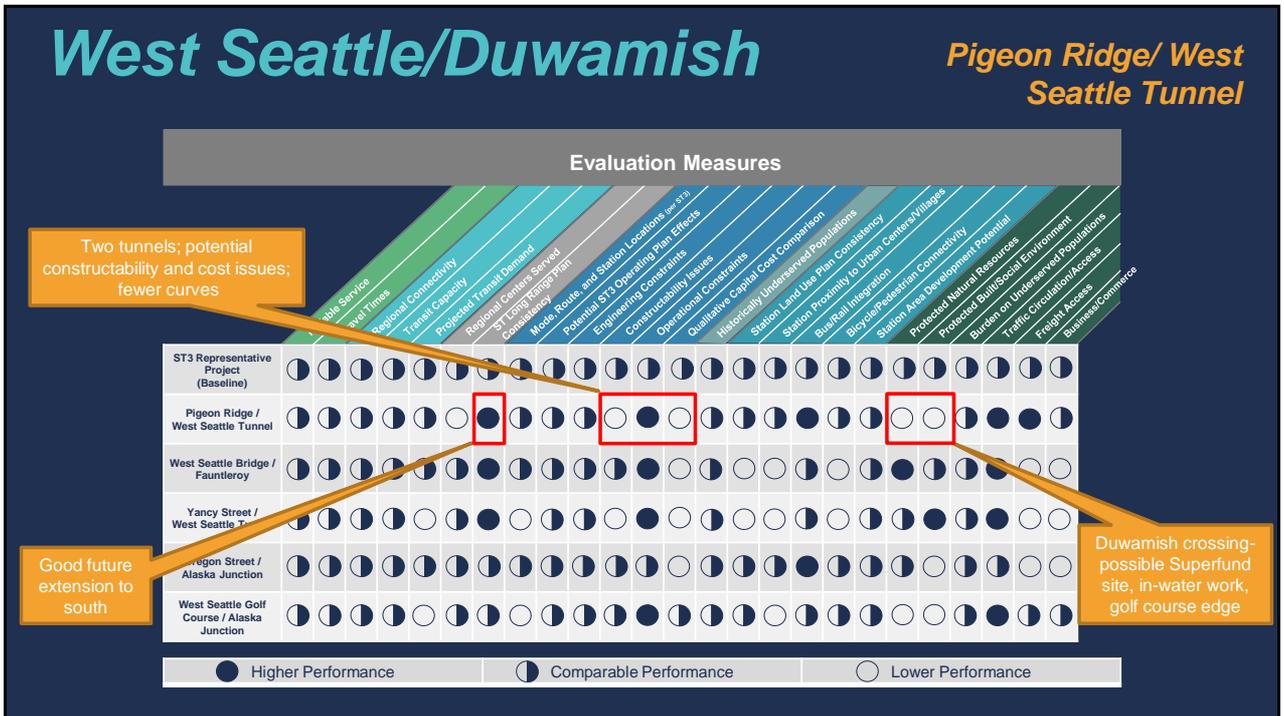
	Evaluation Measures																					
	Reliable Service	Travel Times	Regional Connectivity	Transit Capacity	Projected Transit Demand	Regional Centers Served	ST3 Long Range Plan Consistency	Mode, Route, and Station Locations	Operating Plan Effects	Engineering Constraints	Construction Issues	Operational Constraints	Historically Underserved Populations	Station Land Use Plan Consistency	Station Proximity to Urban Centers/Villages	Bicycle/Pedestrian Connectivity	Station Area Development Potential	Protected Natural Resources	Protected Built/Social Environment	Burden on Undersewed Populations	Traffic Circulation/Access	Burden/Commerce
ST3 Representative Project (Baseline)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Pigeon Ridge / West Seattle Tunnel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
West Seattle Bridge / Fauntleroy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Yancy Street / West Seattle Tunnel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Oregon Street / Alaska Junction	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
West Seattle Golf Course / Alaska Junction	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

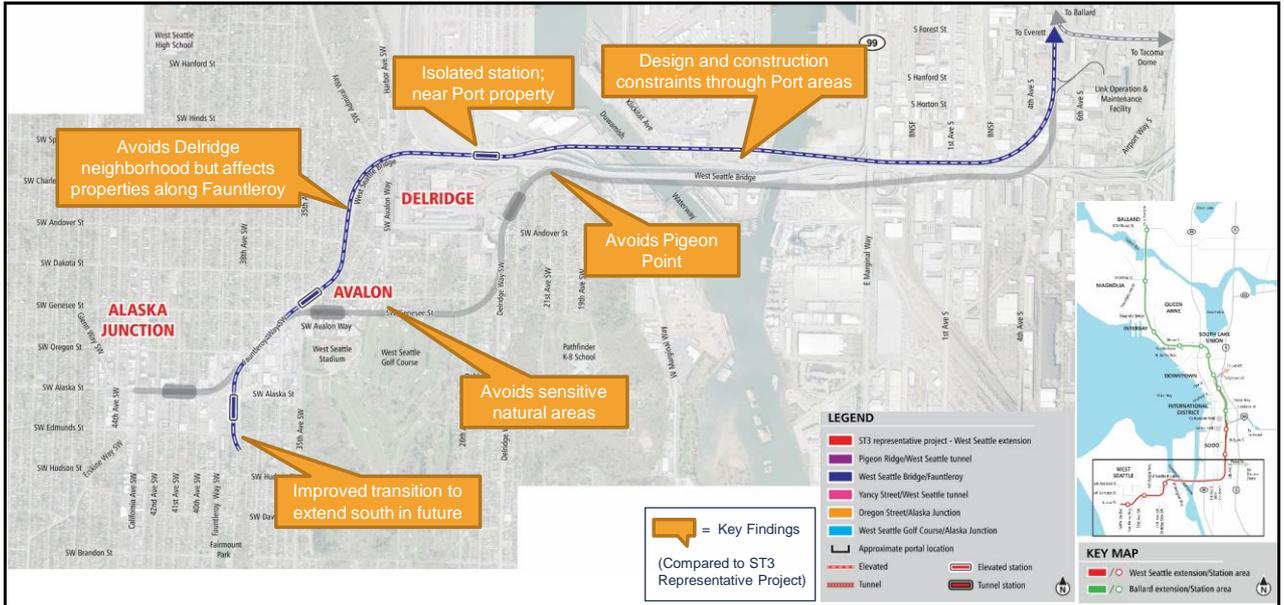
● Higher Performance ● Comparable Performance ○ Lower Performance



West Seattle/Duwamish

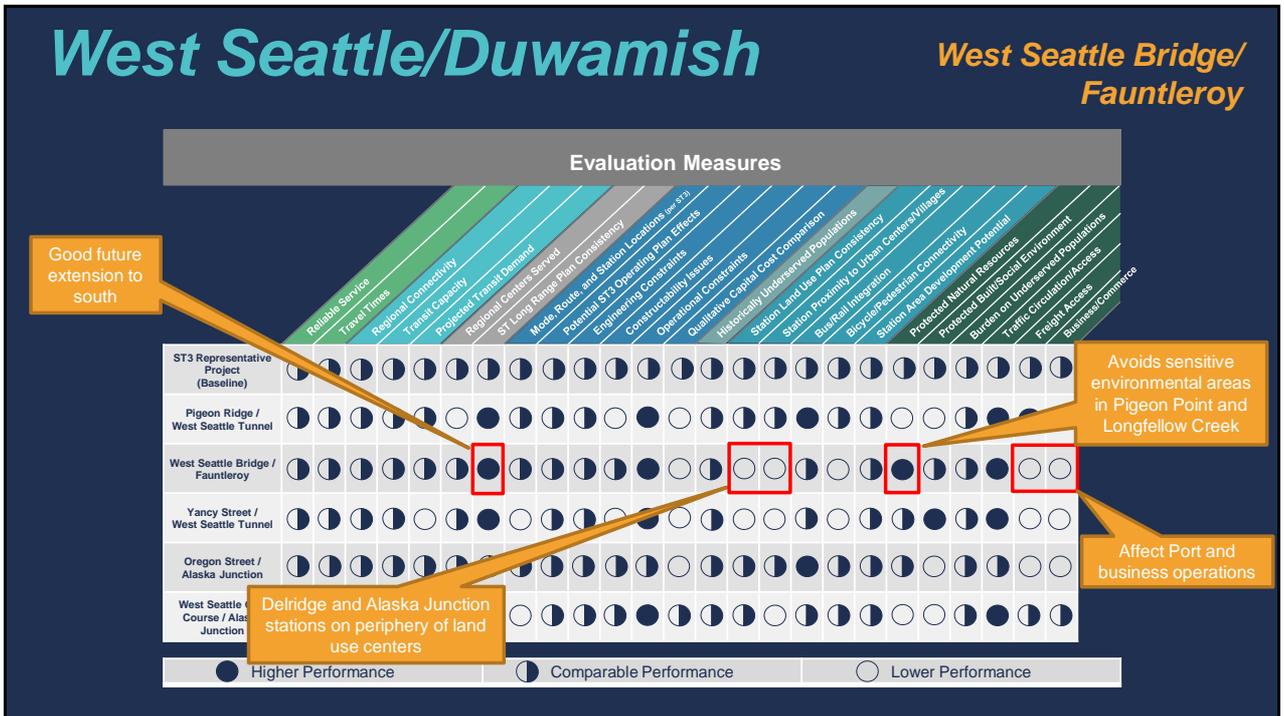
Key Level 1 findings – *Pigeon Ridge/West Seattle Tunnel*

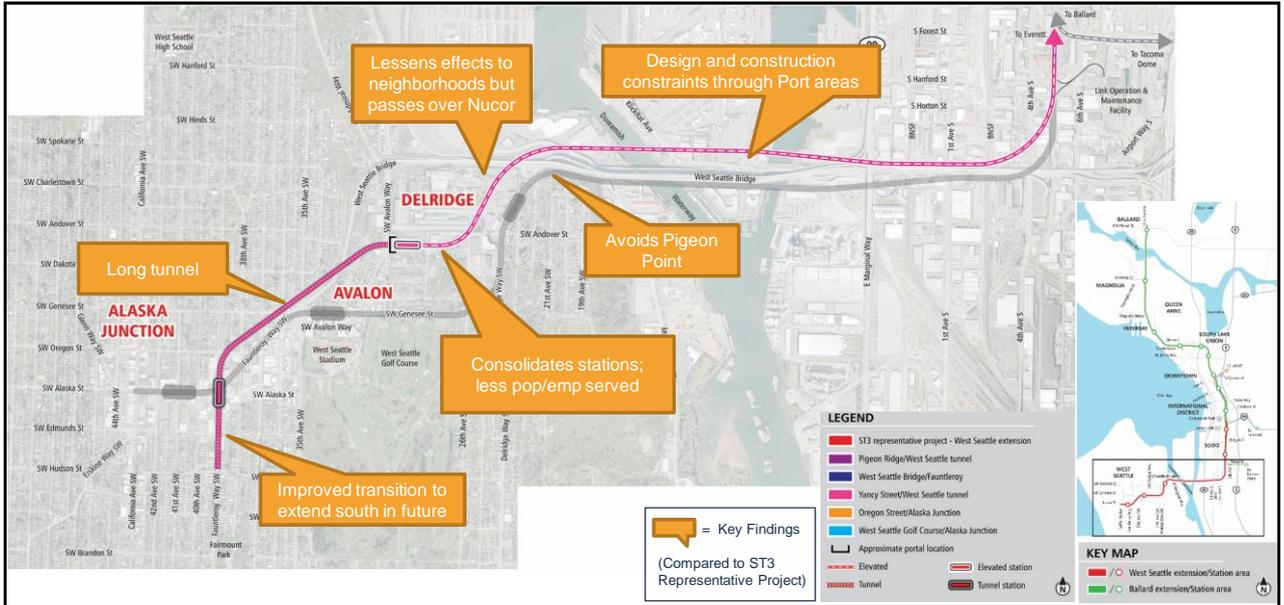




West Seattle/Duwamish

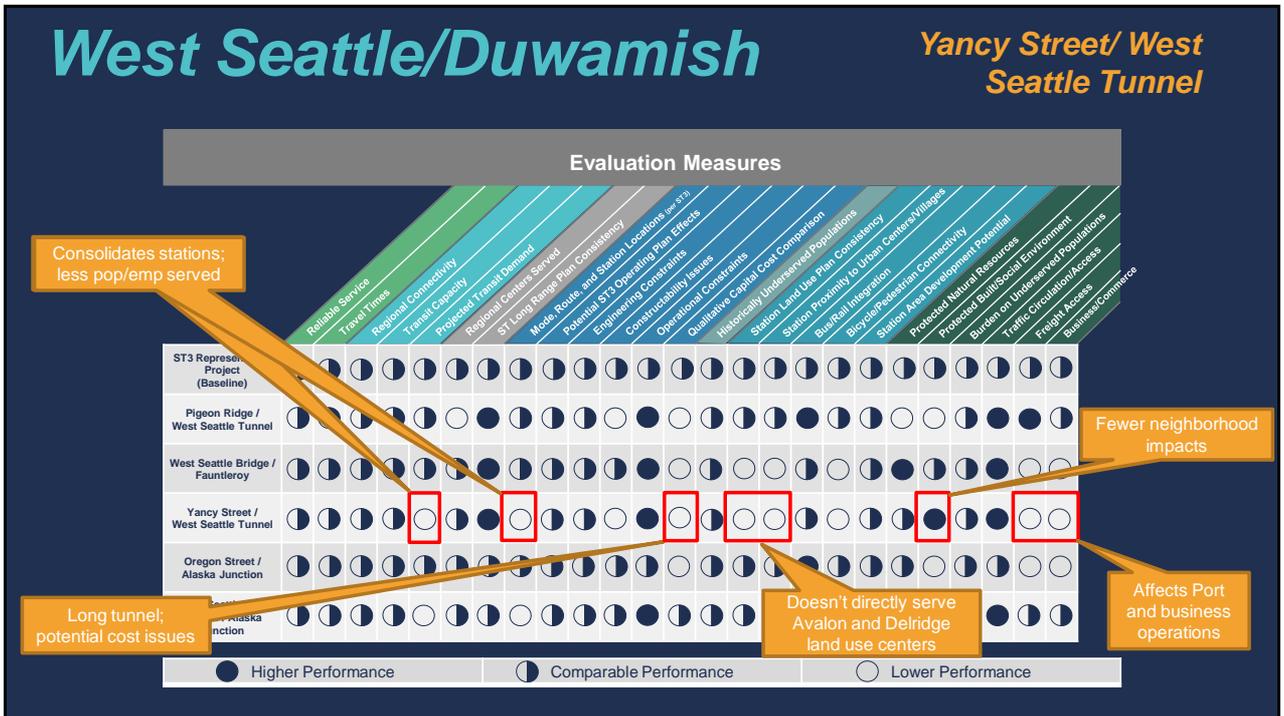
Key Level 1 findings – *West Seattle Bridge/Fauntleroy*

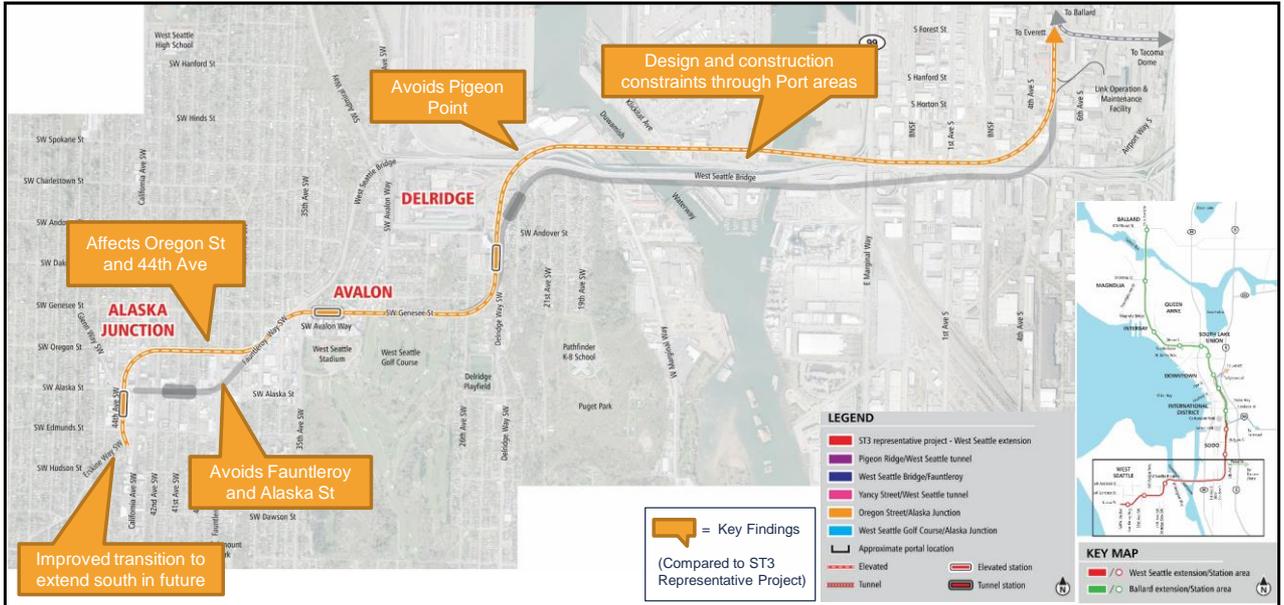




West Seattle/Duwamish

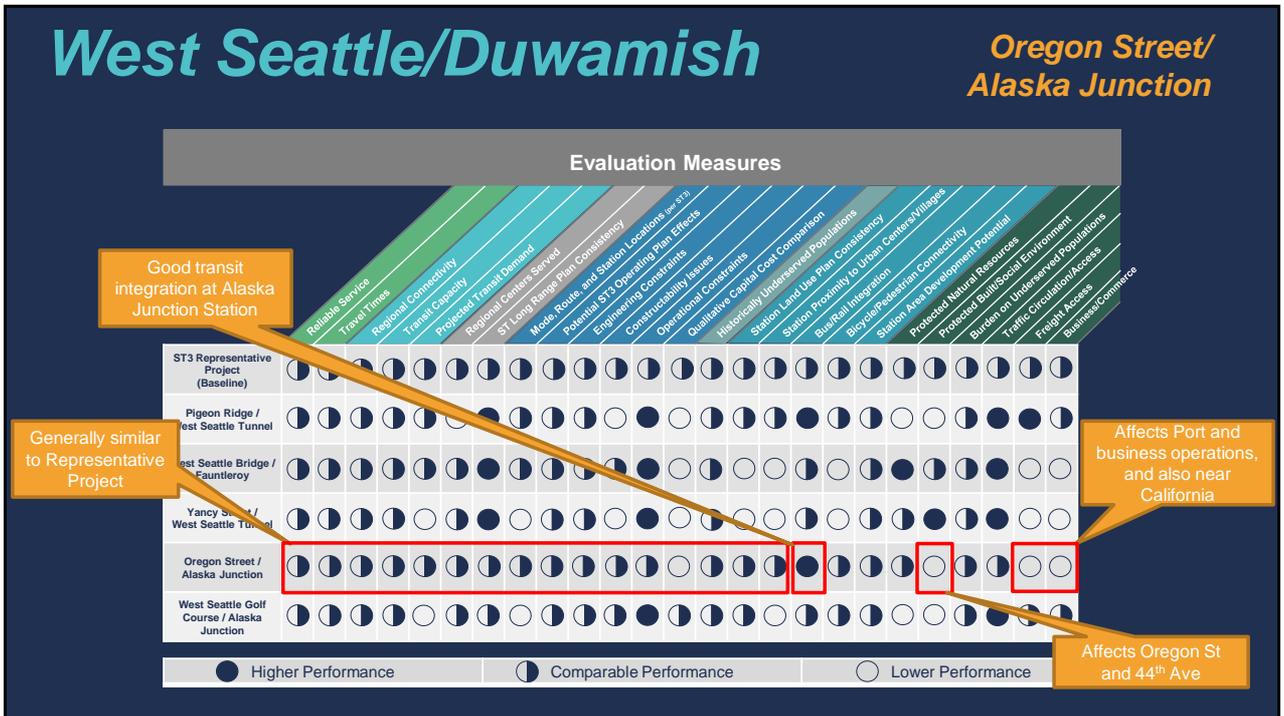
Key Level 1 findings – *Yancy Street/West Seattle Tunnel*

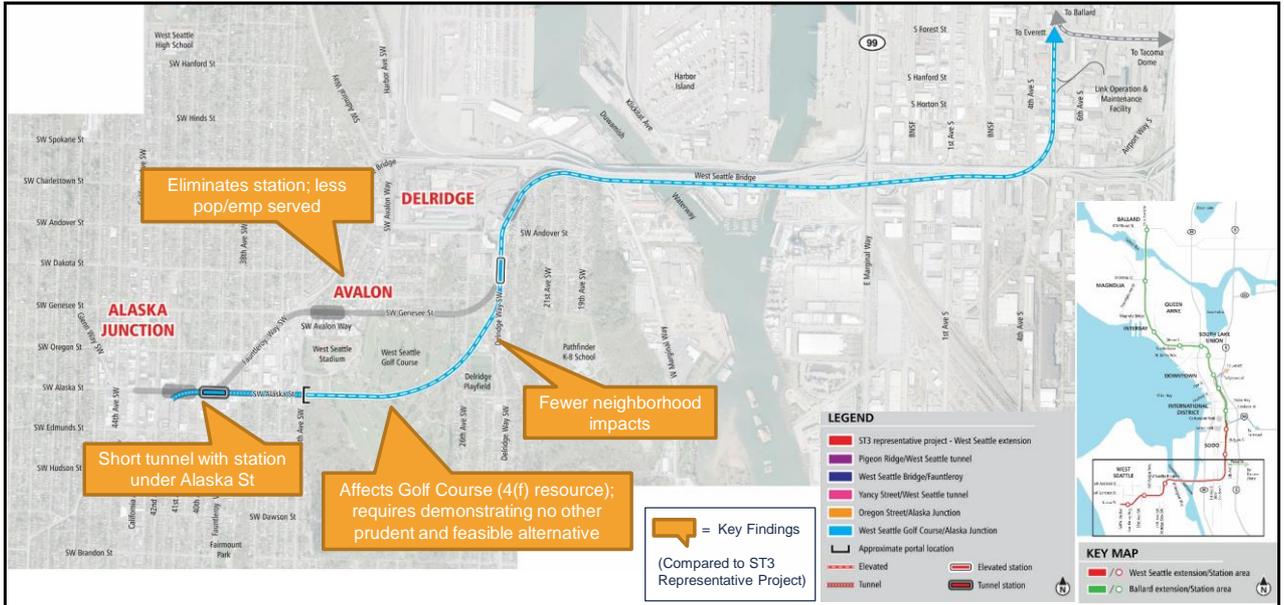




West Seattle/Duwamish

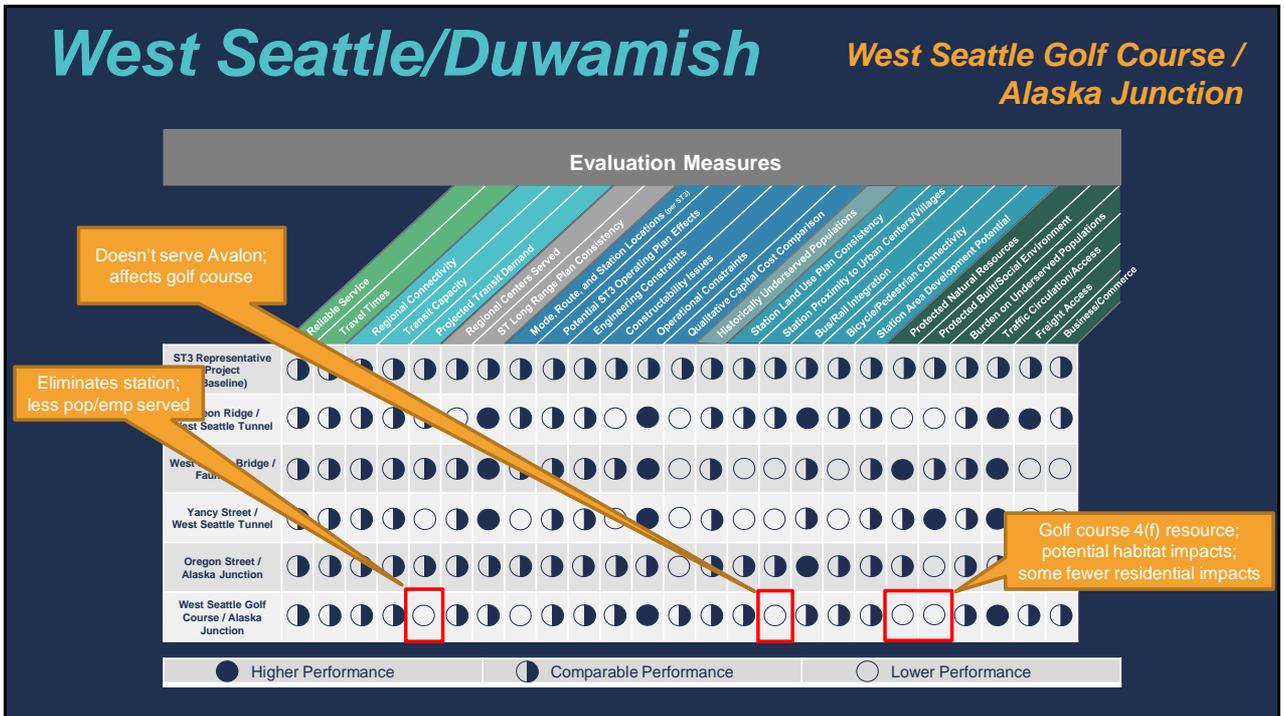
Key Level 1 findings – Oregon Street/Alaska Junction





West Seattle/Duwamish

Key Level 1 findings – *West Seattle Golf Course/Alaska Junction*



Section 4(f)

- Stipulates that United States Department of Transportation (USDOT) agencies, such as the **Federal Transit Administration (FTA)**, **cannot approve the use of land from publicly owned parks**, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless:

- There is **no feasible and prudent avoidance alternative** to the use of land; and includes all possible planning **to minimize harm to the property** resulting from such use;

OR

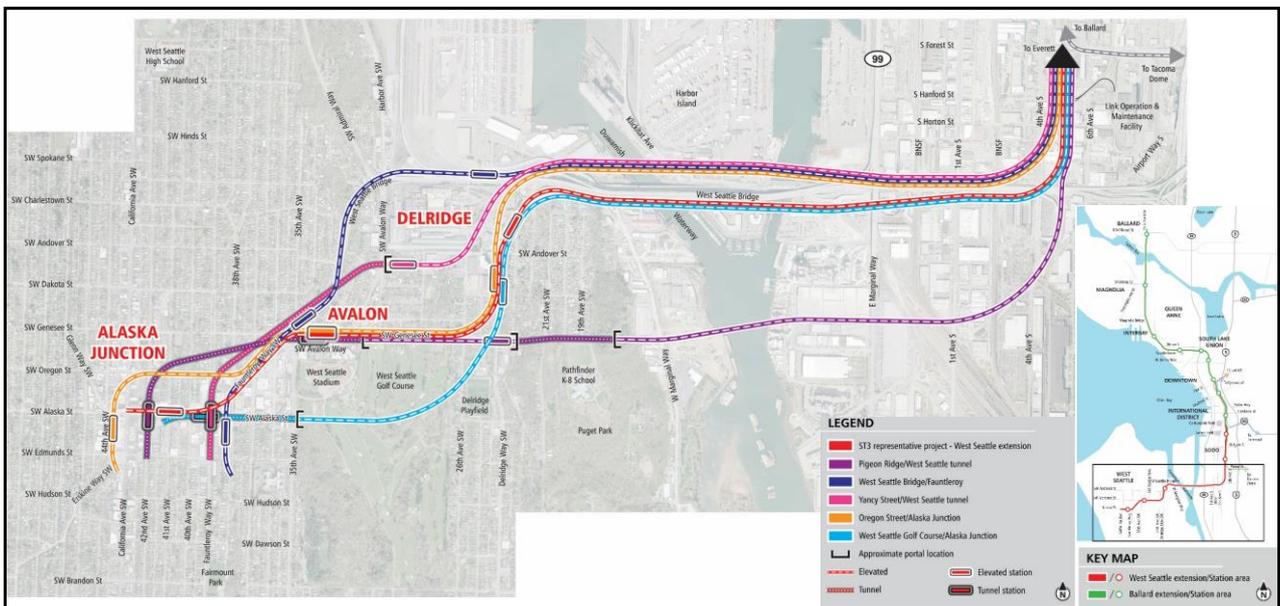
- The Administration determines that the use of the property will have a **de minimis impact**

43

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West Seattle/Duwamish summary

Alternatives with more potential	ST3 Representative Project	<ul style="list-style-type: none"> • Baseline for comparison
	Oregon Street/Alaska Junction	<ul style="list-style-type: none"> • Avoids Fauntleroy and Alaska; better orientation south • Affects Oregon St and 44th Ave
	West Seattle Bridge/Fauntleroy	<ul style="list-style-type: none"> • Lessens effects to Junction and Delridge; better orientation south • Creates isolated Delridge Station
Alternatives with greater challenges	Pigeon Ridge/West Seattle Tunnel	<ul style="list-style-type: none"> • Lessens effects to Port, Junction, Delridge; better orientation south • Requires two tunnels; may require 3rd Party funding
	Yancy Street/West Seattle Tunnel	<ul style="list-style-type: none"> • Lessens effects to Junction and Delridge; better orientation south • Consolidates stations; potentially not consistent with ST3 Plan • Requires tunnel; may require 3rd Party funding
Not practical suggestions	West Seattle Golf Course/Alaska Junction (Tunnel)	<ul style="list-style-type: none"> • Crosses golf course, Section 4(f) • Lessens effects to Junction, Delridge • Eliminates station; potentially not consistent with ST3 Plan
	Tunnel under Duwamish	<ul style="list-style-type: none"> • Impractical tunnel depth and length
	West Seattle Bridge	<ul style="list-style-type: none"> • Existing structure not built to accommodate LRT • Constructability issues
	Gondola, rail/bus bridge	<ul style="list-style-type: none"> • Mode not consistent with ST3 Plan
Extensions to Alki, Admiral, etc.	<ul style="list-style-type: none"> • Not included in ST3 Plan or long range plan 	



West Seattle/Duwamish

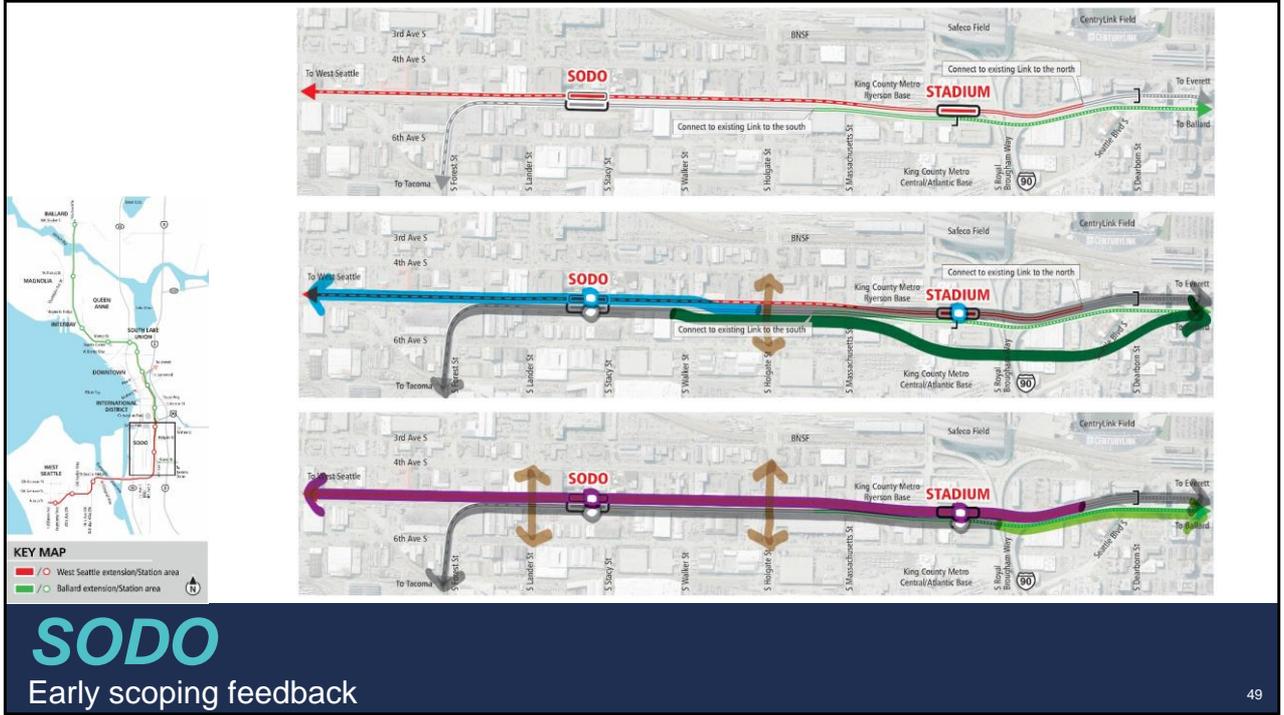
Level 1 alternatives

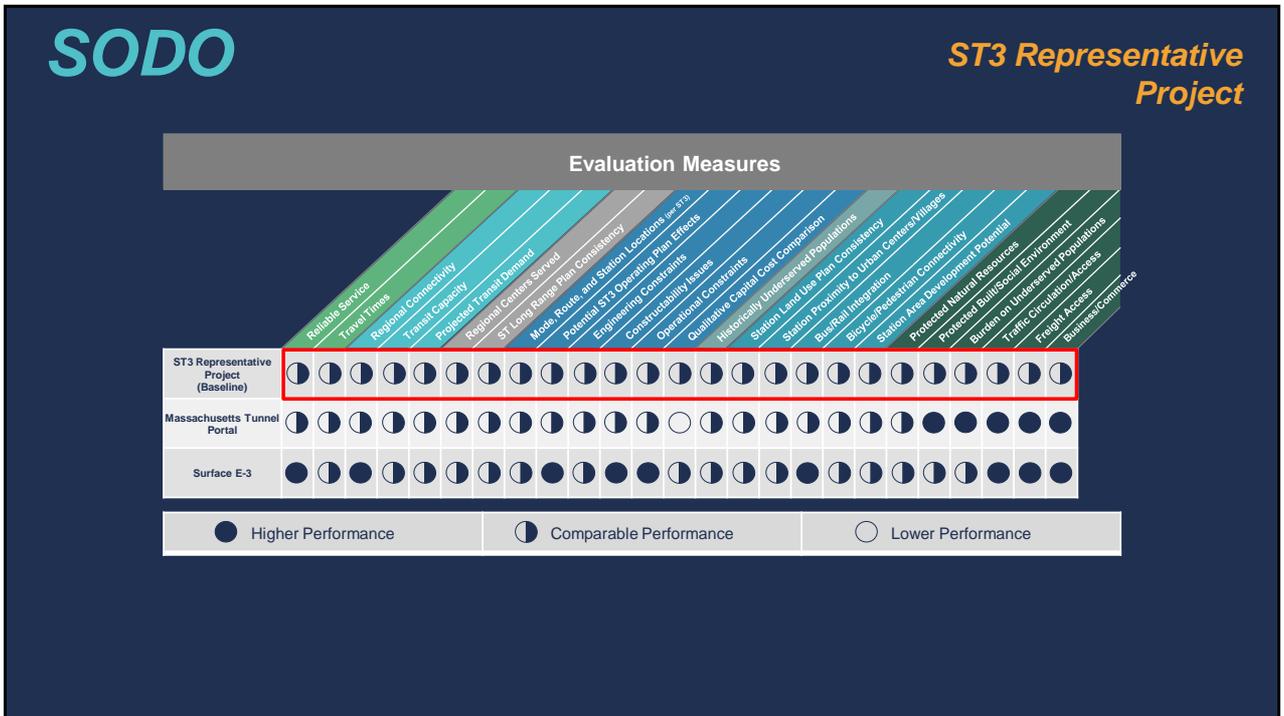
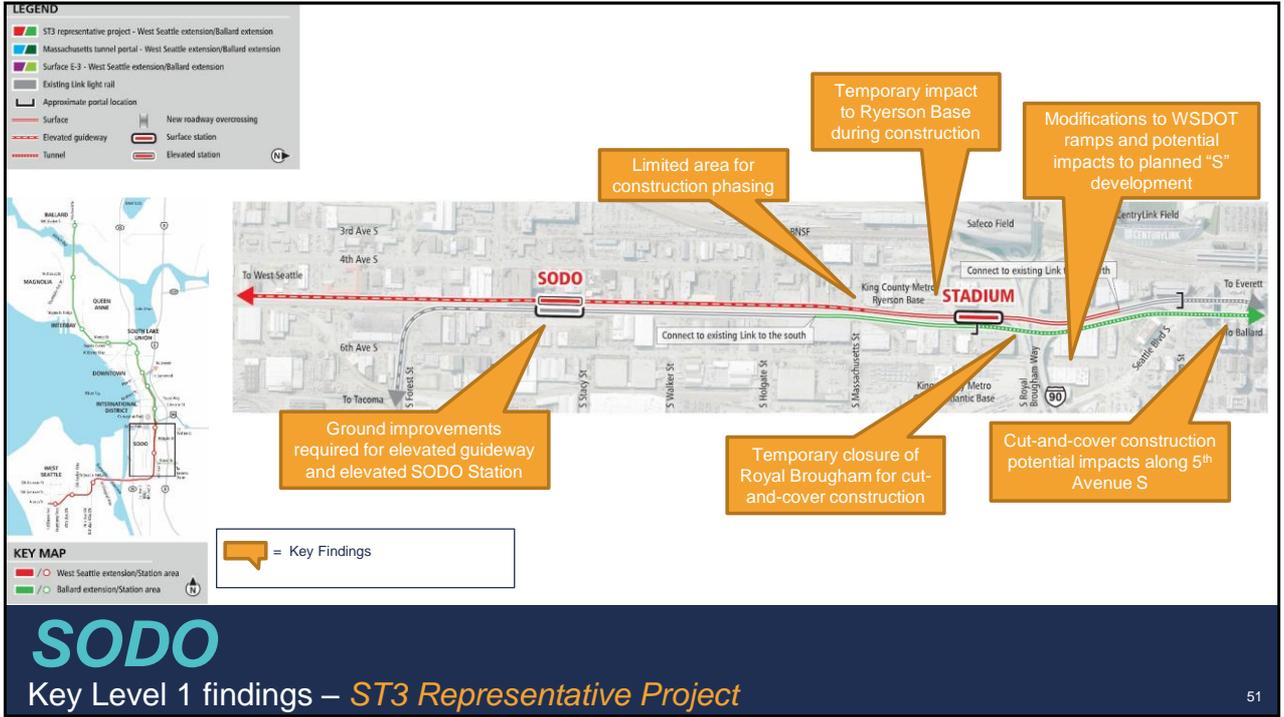
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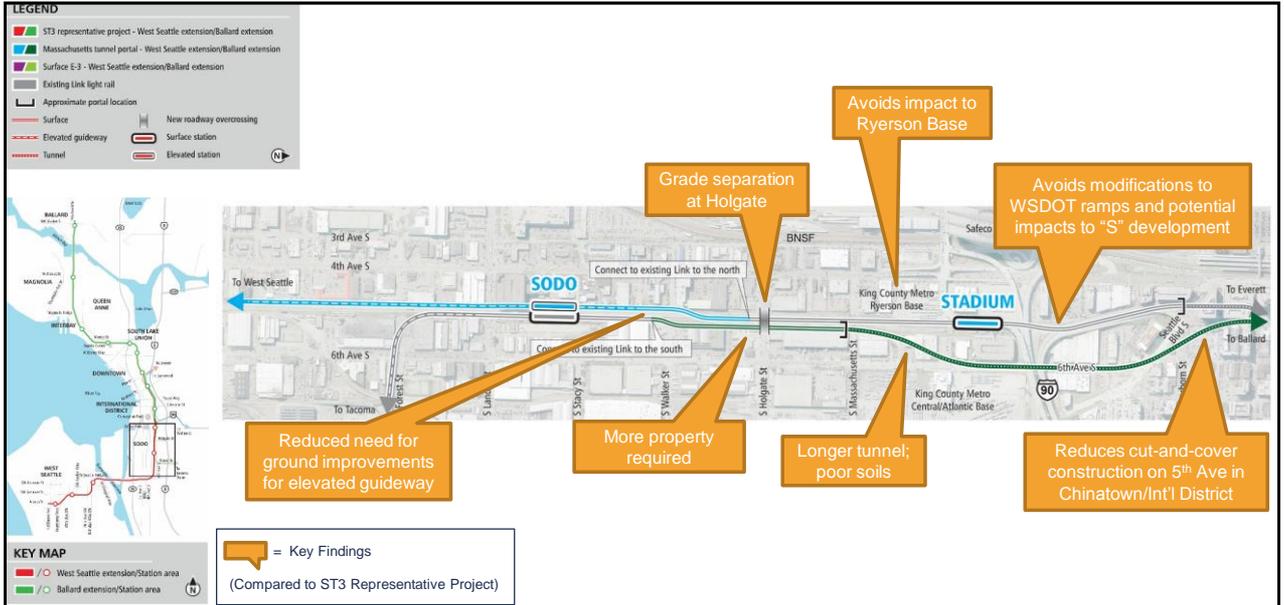
Level 1 alternatives

SODO

- ST3 Representative Project
- Massachusetts Tunnel Portal
- Surface E-3

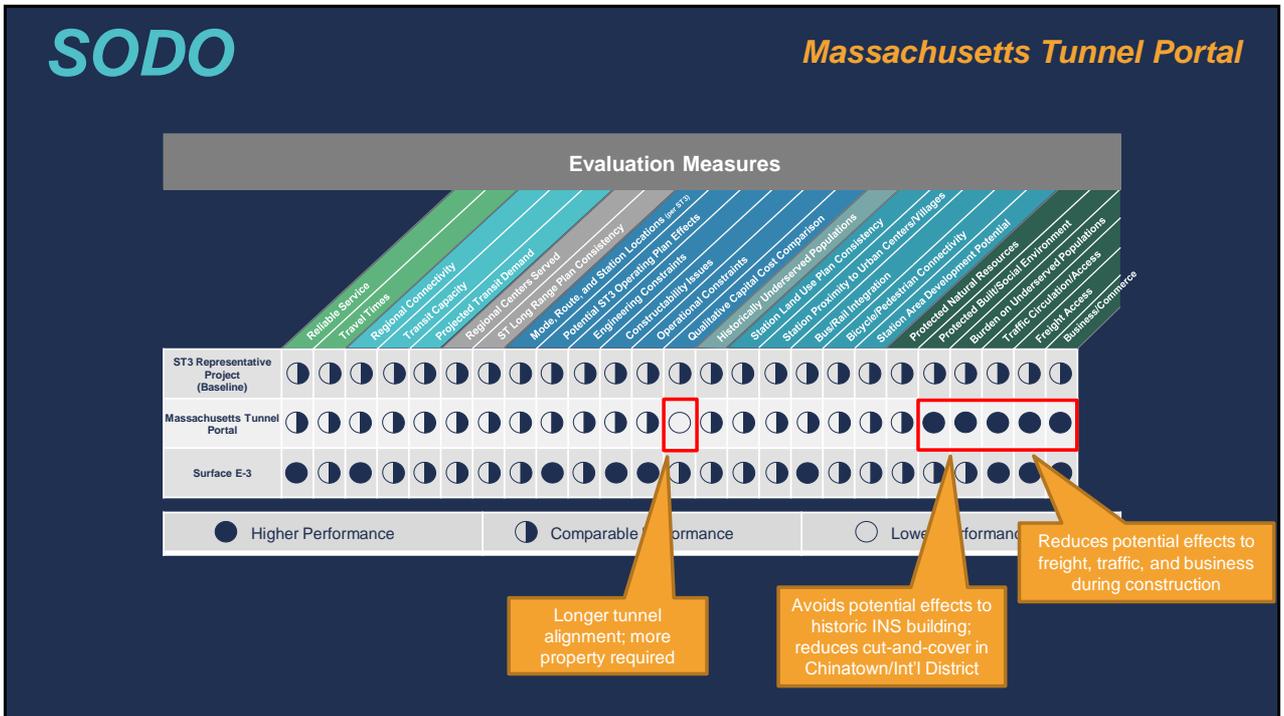


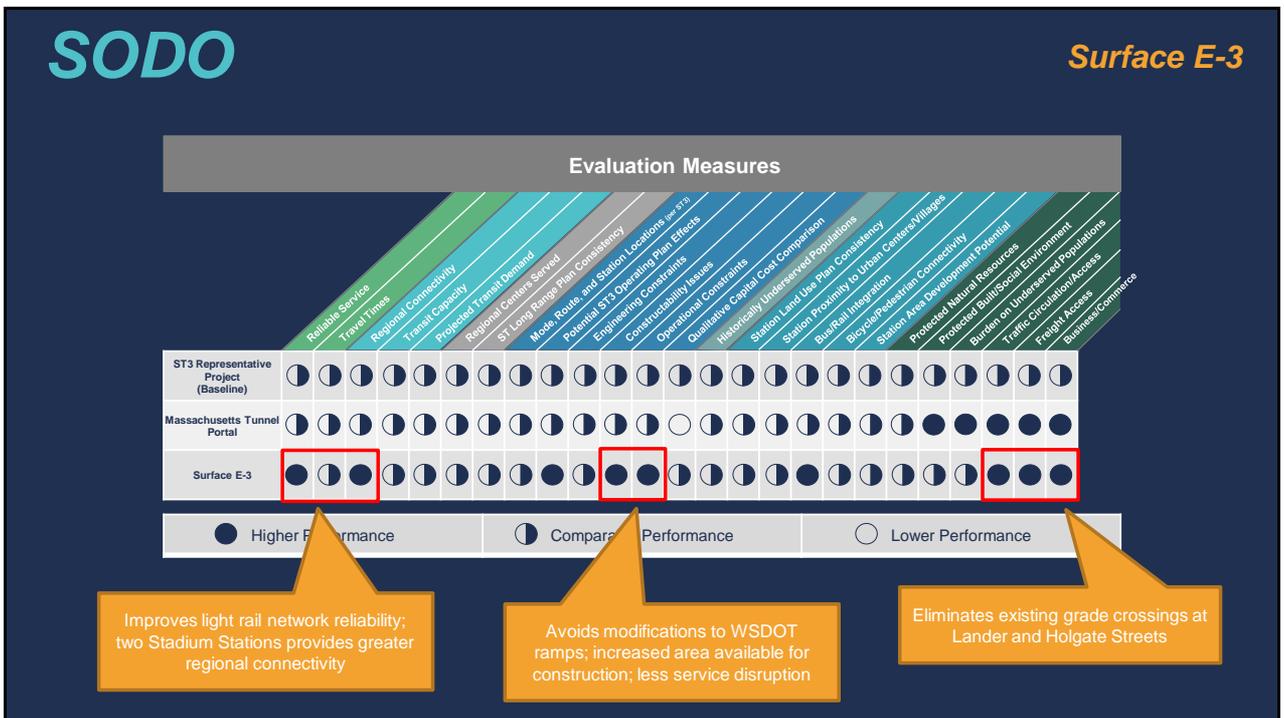
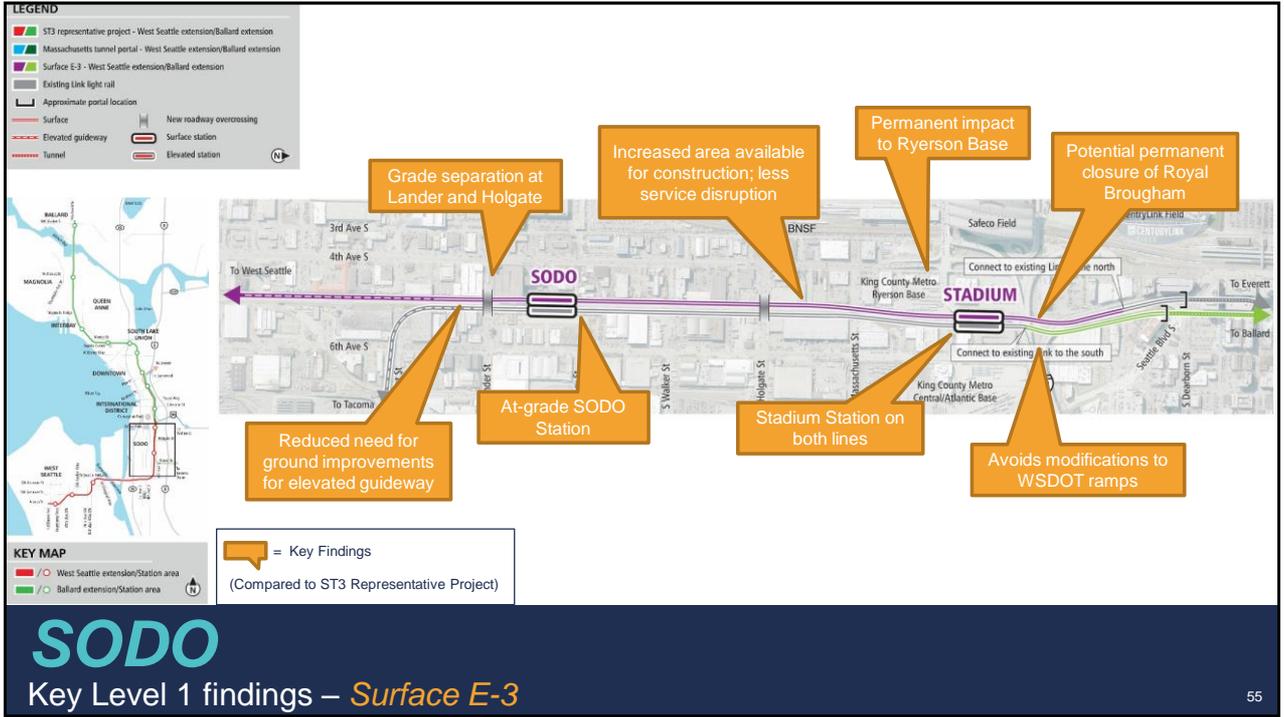




SODO

Key Level 1 findings – Massachusetts Tunnel Portal

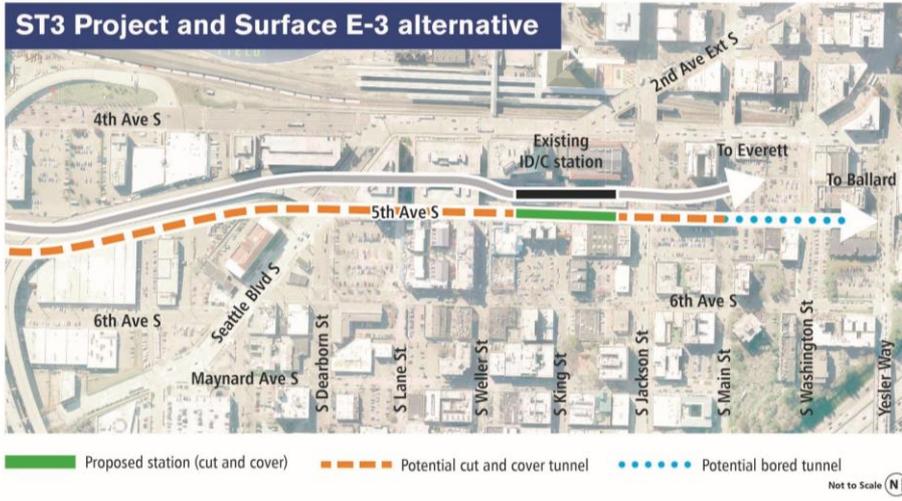




International District/Chinatown Station

Cut and cover tunnel

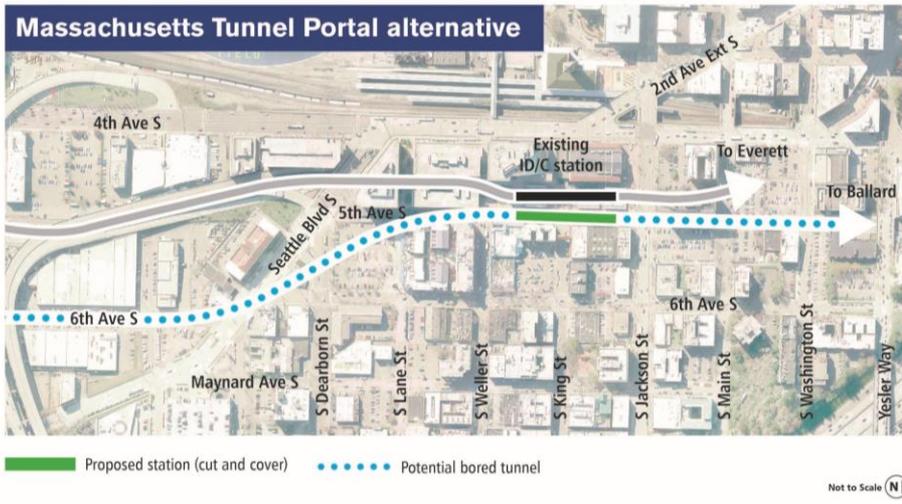
ST3 Project and Surface E-3 alternative



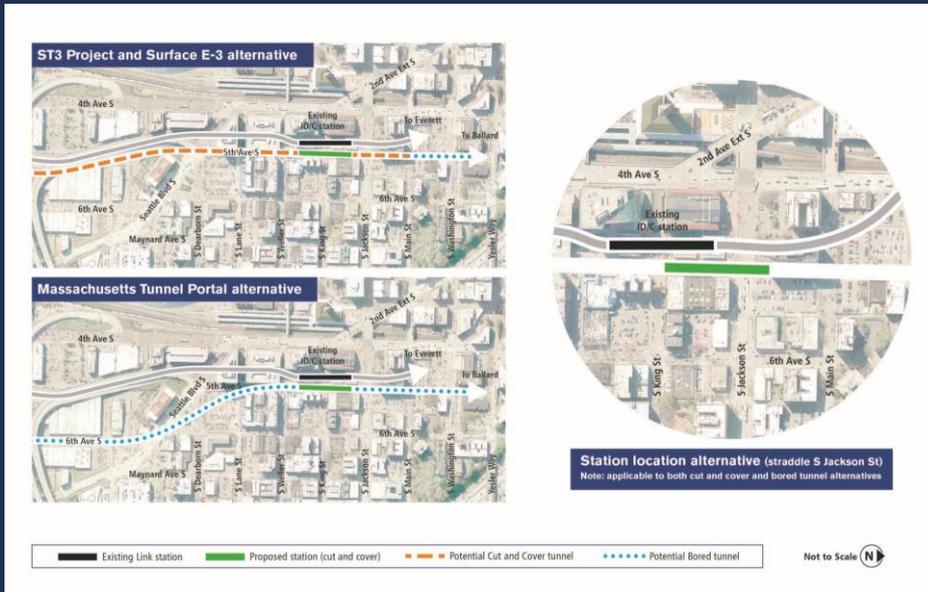
International District/Chinatown Station

Bored tunnel

Massachusetts Tunnel Portal alternative



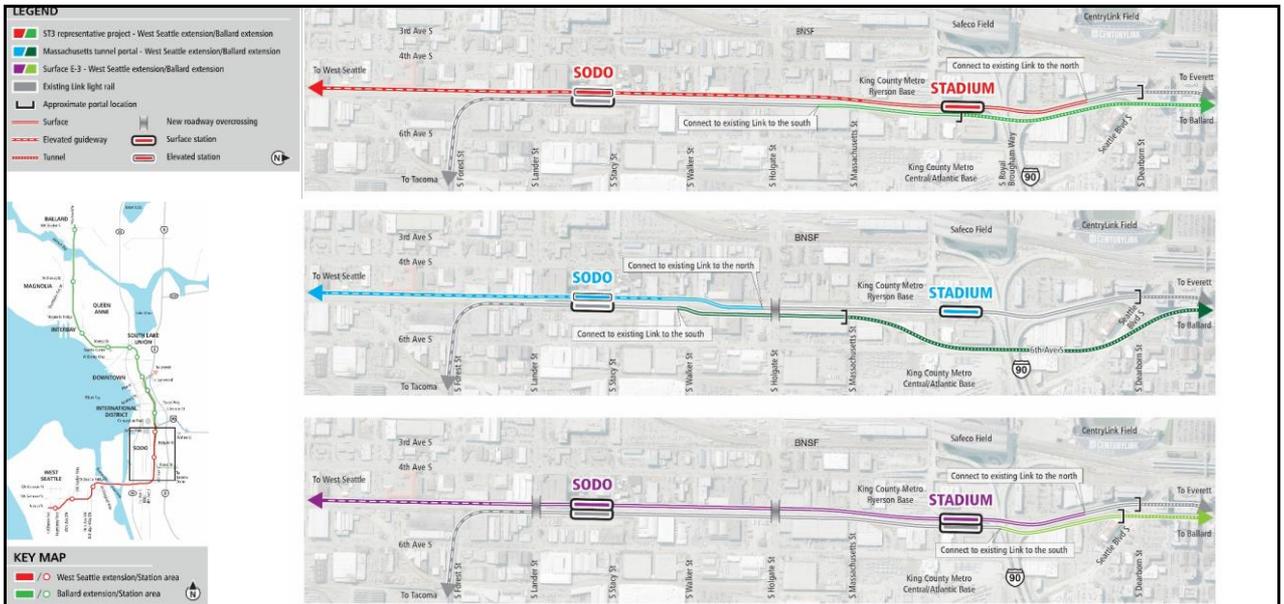
International District/Chinatown Station



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SODO summary

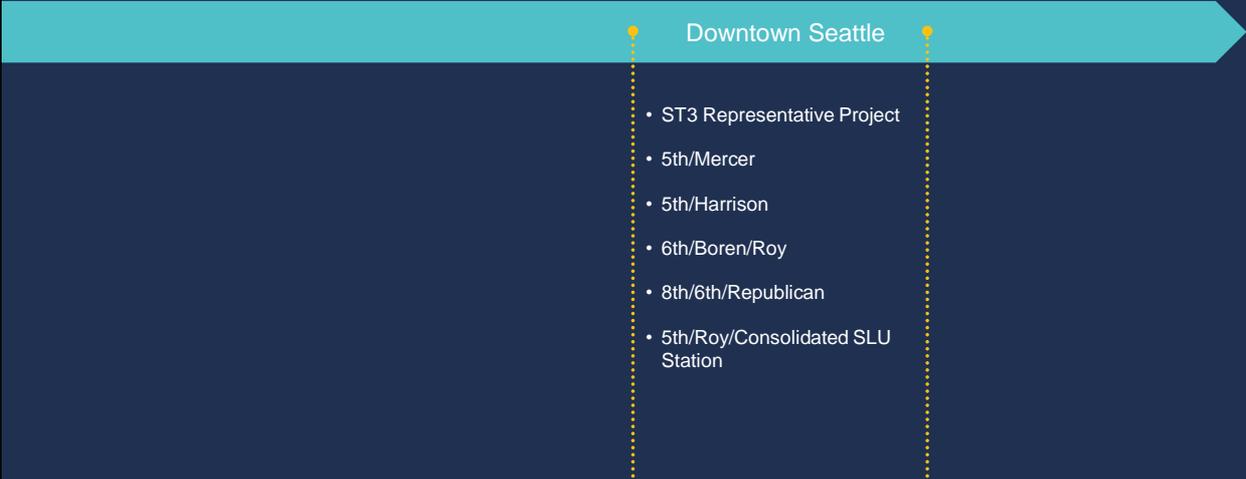
Alternatives with more potential	ST3 Representative Project	<ul style="list-style-type: none"> • Baseline for comparison
	Surface E-3	<ul style="list-style-type: none"> • Less service disruption during construction • Accommodates Stadium Station on both lines • Eliminates existing grade crossings at Lander, Holgate; closes Royal Brougham
Not practical suggestions	Massachusetts Portal	<ul style="list-style-type: none"> • Reduces cut-and-cover construction on 5th Ave in Chinatown/Int'l District • Less service disruption during construction • Eliminates existing grade crossing at Holgate • Requires longer tunnel; more property; may require 3rd Party funding
	Maintain buses on E-3	<ul style="list-style-type: none"> • Not practical due to ROW constraints
	First Ave alignment	<ul style="list-style-type: none"> • Alignment and stations locations not consistent with ST3
	Design for potential extension south to Georgetown	<ul style="list-style-type: none"> • Not included in ST3 or long range plan



SODO Level 1 alternatives

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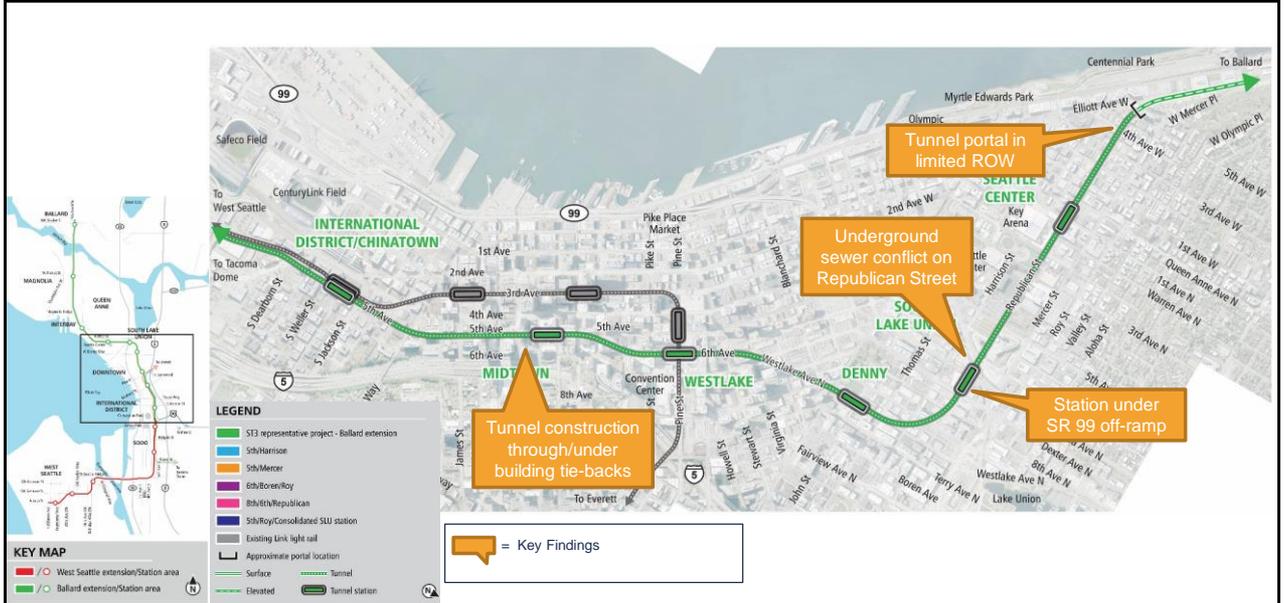
Level 1 alternatives



Downtown Seattle

- ST3 Representative Project
- 5th/Mercer
- 5th/Harrison
- 6th/Boren/Roy
- 8th/6th/Republican
- 5th/Roy/Consolidated SLU Station





Downtown

Key Level 1 findings – *ST3 Representative Project*

Downtown

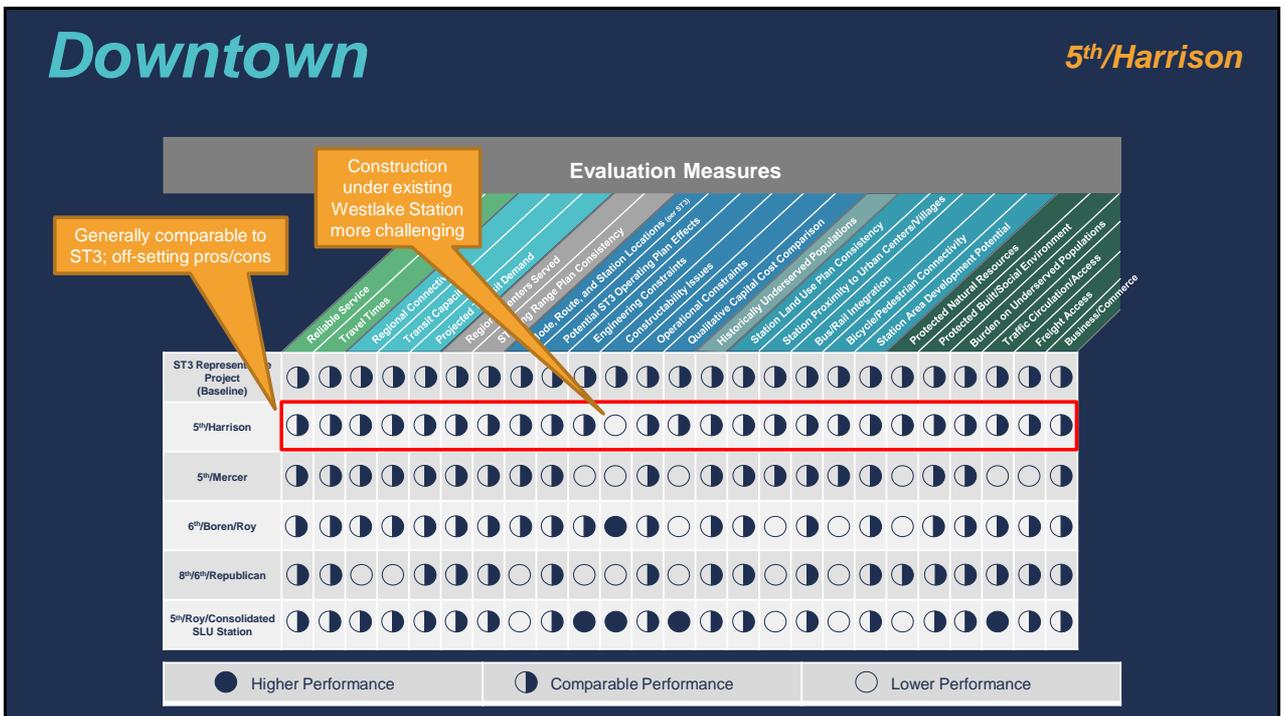
ST3 Representative Project

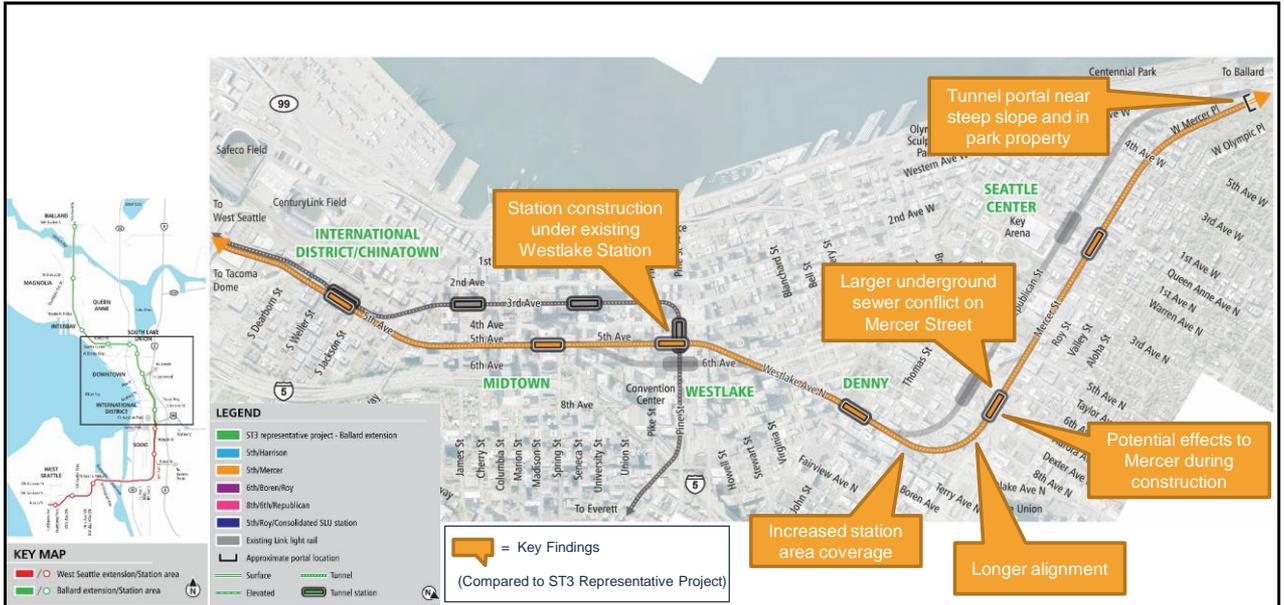
		Evaluation Measures																							
		Reliable Service	Travel Times	Regional Connectivity	Transit Capacity	Projected Transit Demand	Regional Ridership	ST3 Long Range Plan Consistency	Mode, Route, and Station Location Consistency	Potential ST3 Operating Plan Effects	Engineering Constraints	Constructability Issues	Operational Constraints	Qualitative Capital Cost Comparison	Historically Underserved Populations	Station Land Use Plan Consistency	Station Proximity to Urban Centers/Villages	Public Transit Integration	Station Area Development Connectivity	Protected Natural Resources	Protected Cultural Resources	Burden on Underserved Populations	Traffic Circulation	Freight Access	Business/Commerce
ST3 Representative Project (Baseline)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5 th /Harrison		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5 th /Mercer		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6 th /Boren/Roy		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8 th /6 th /Republican		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5 th /Roy/Consolidated SLU Station		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● Higher Performance

◐ Comparable Performance

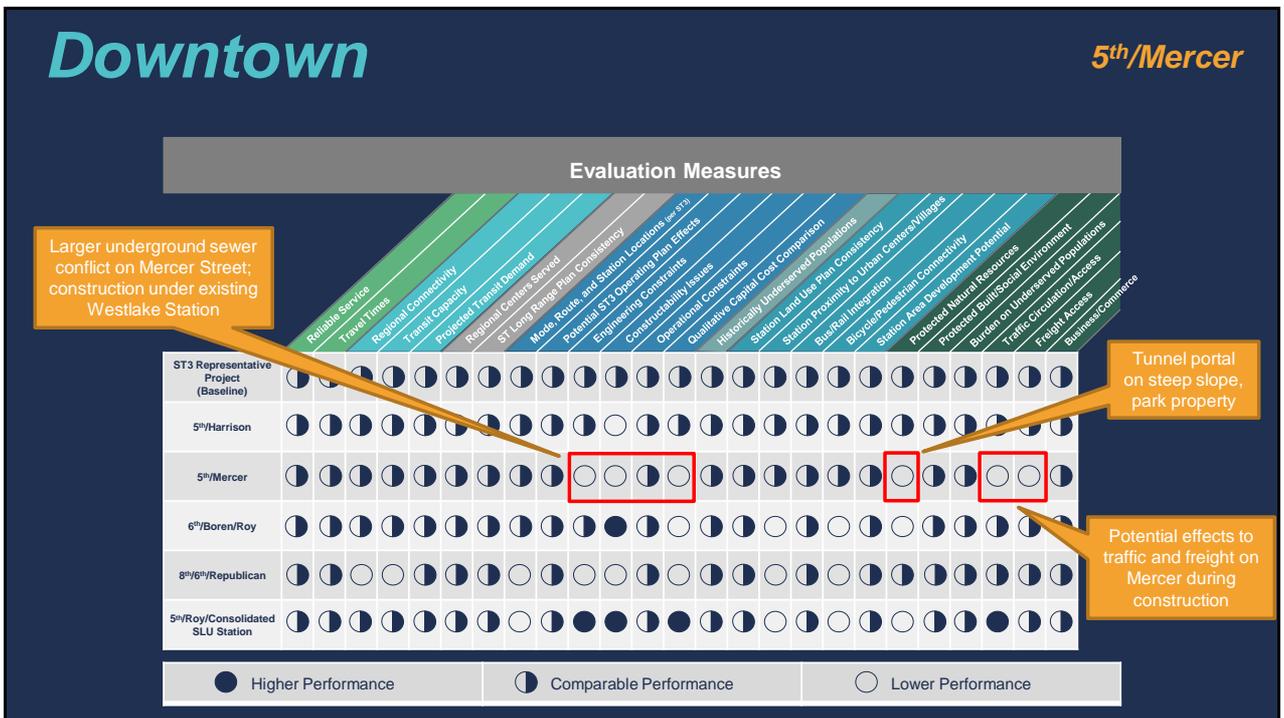
○ Lower Performance

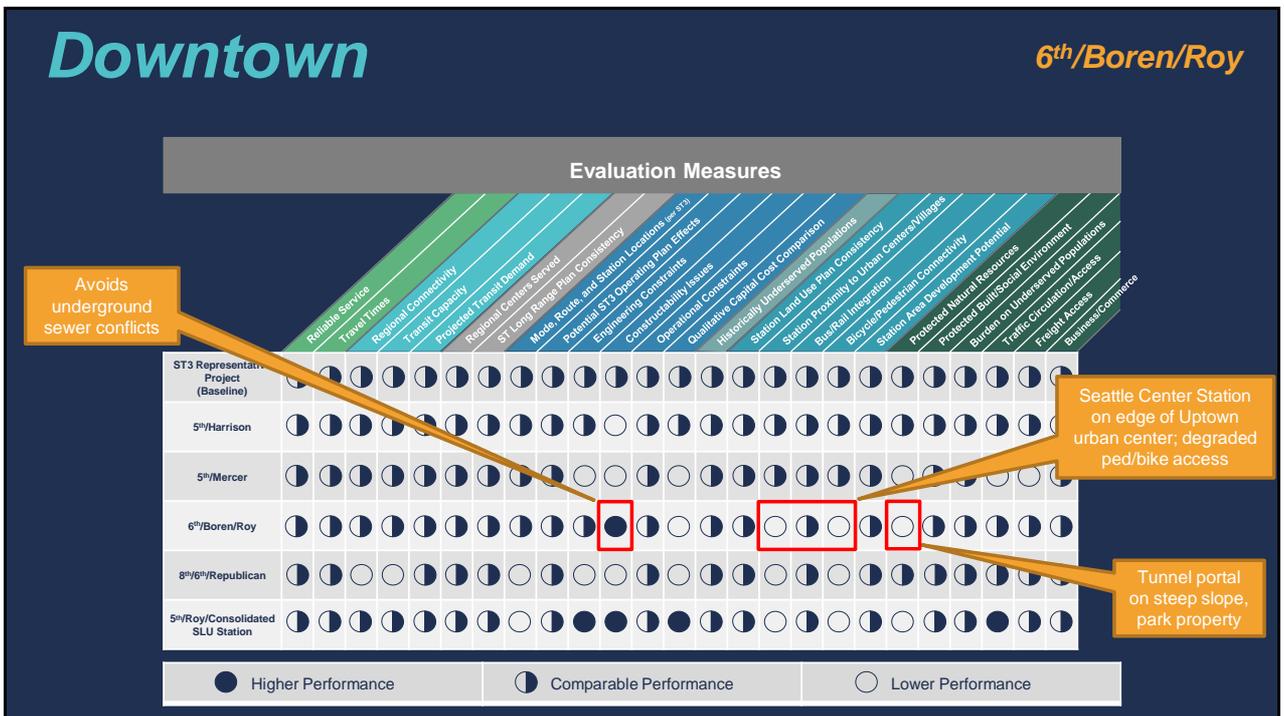
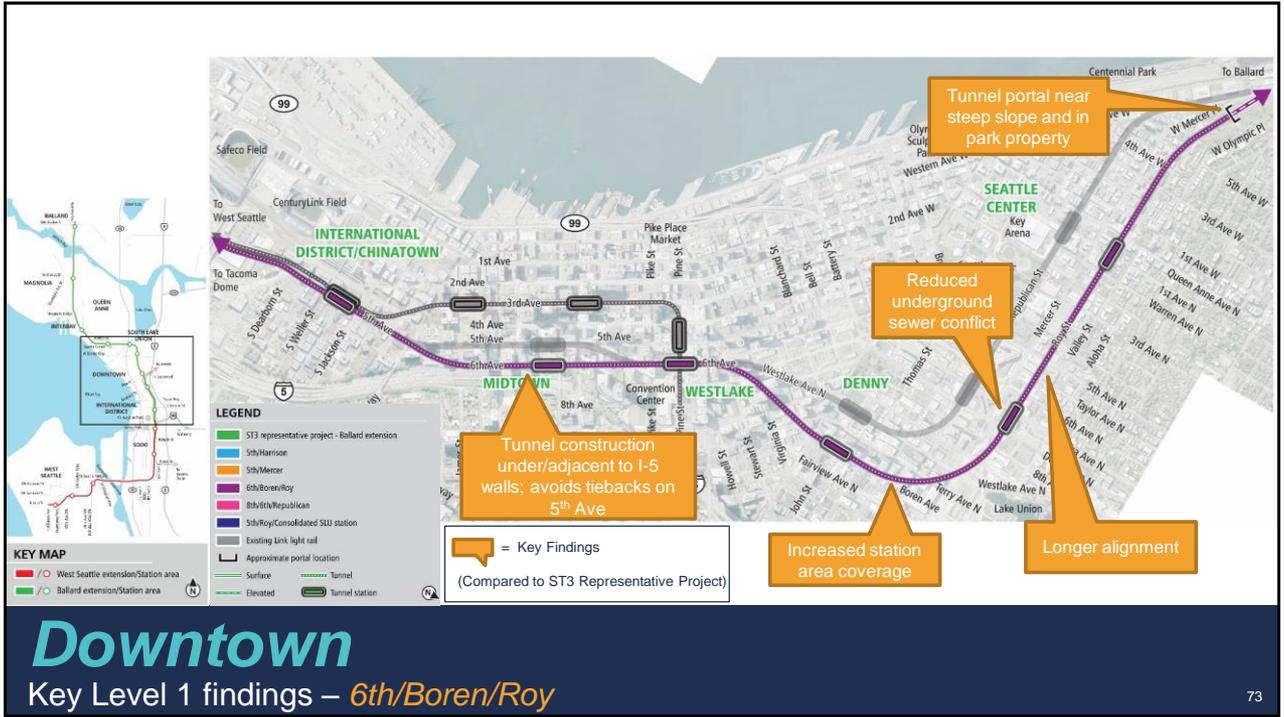


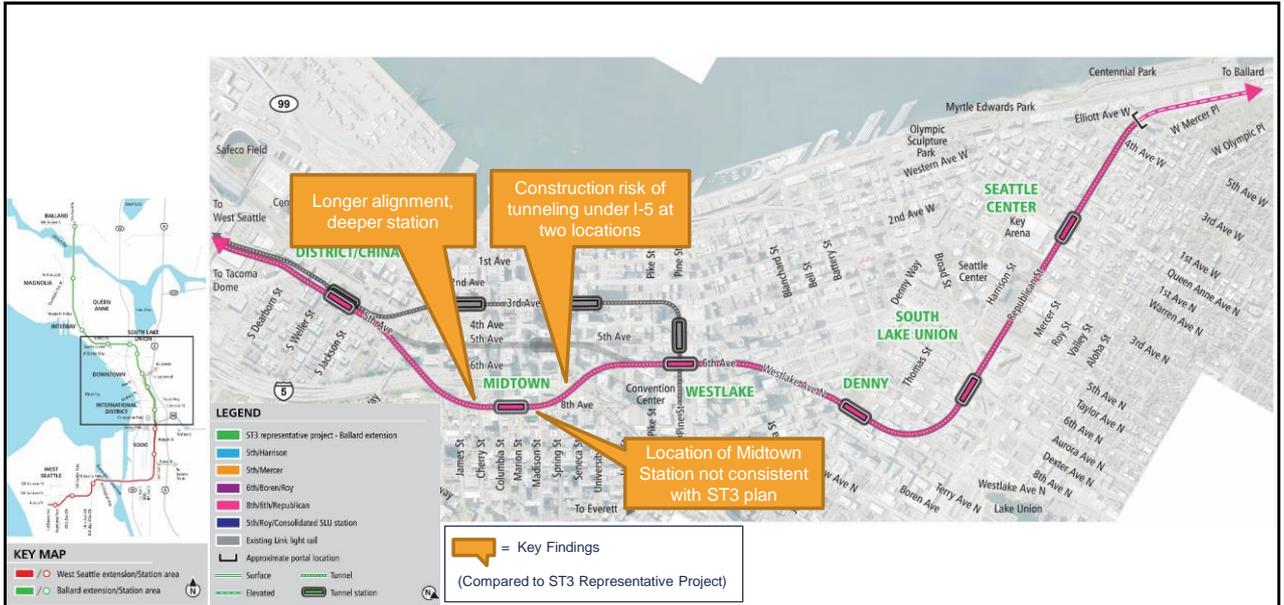


Downtown

Key Level 1 findings – 5th/Mercer

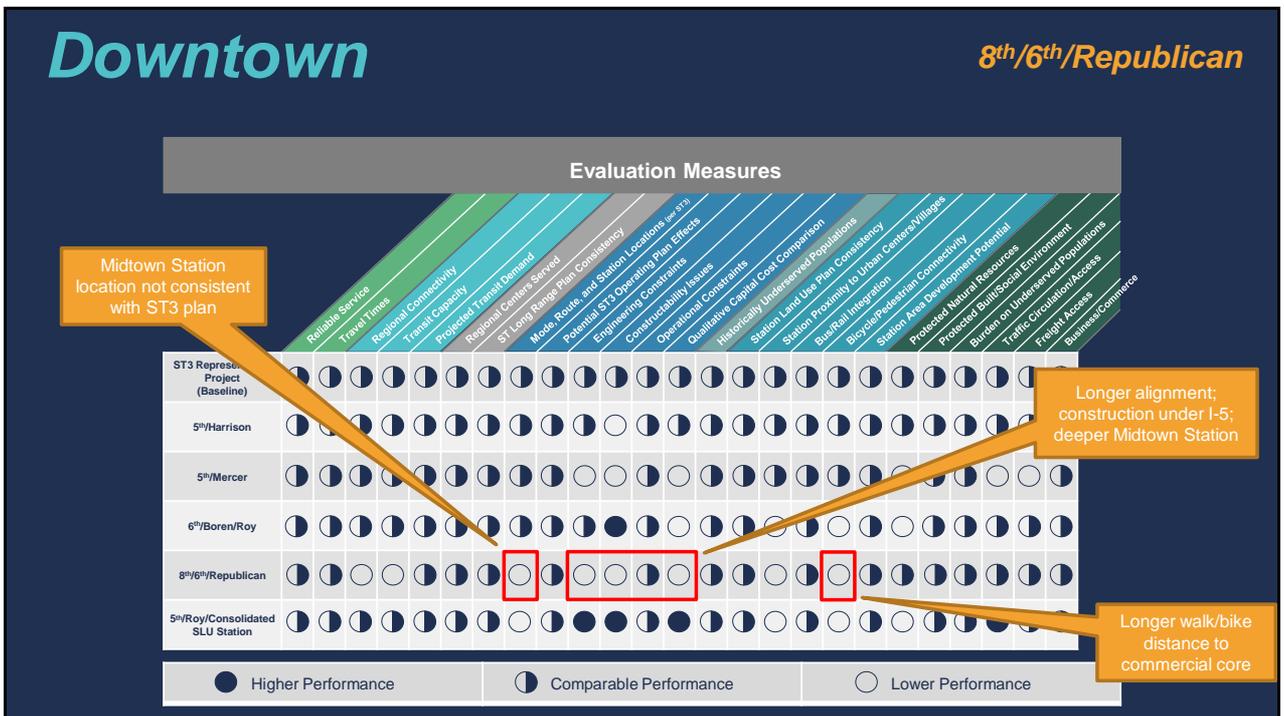


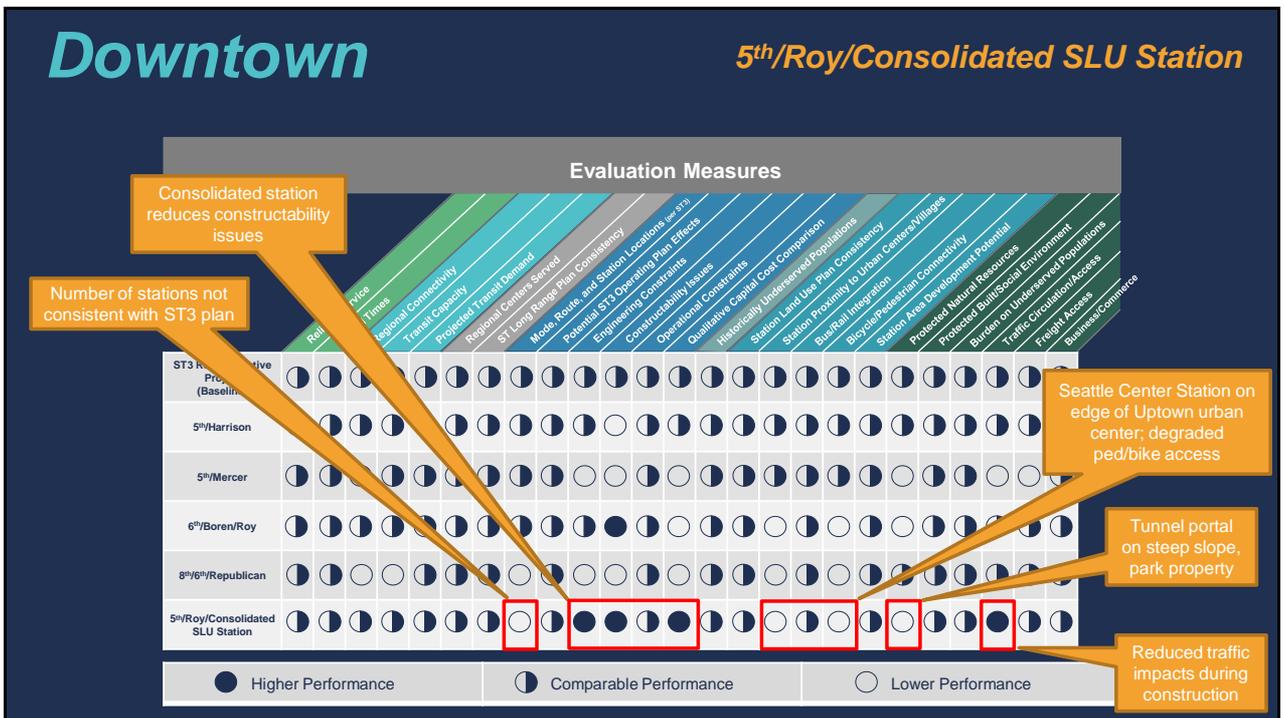
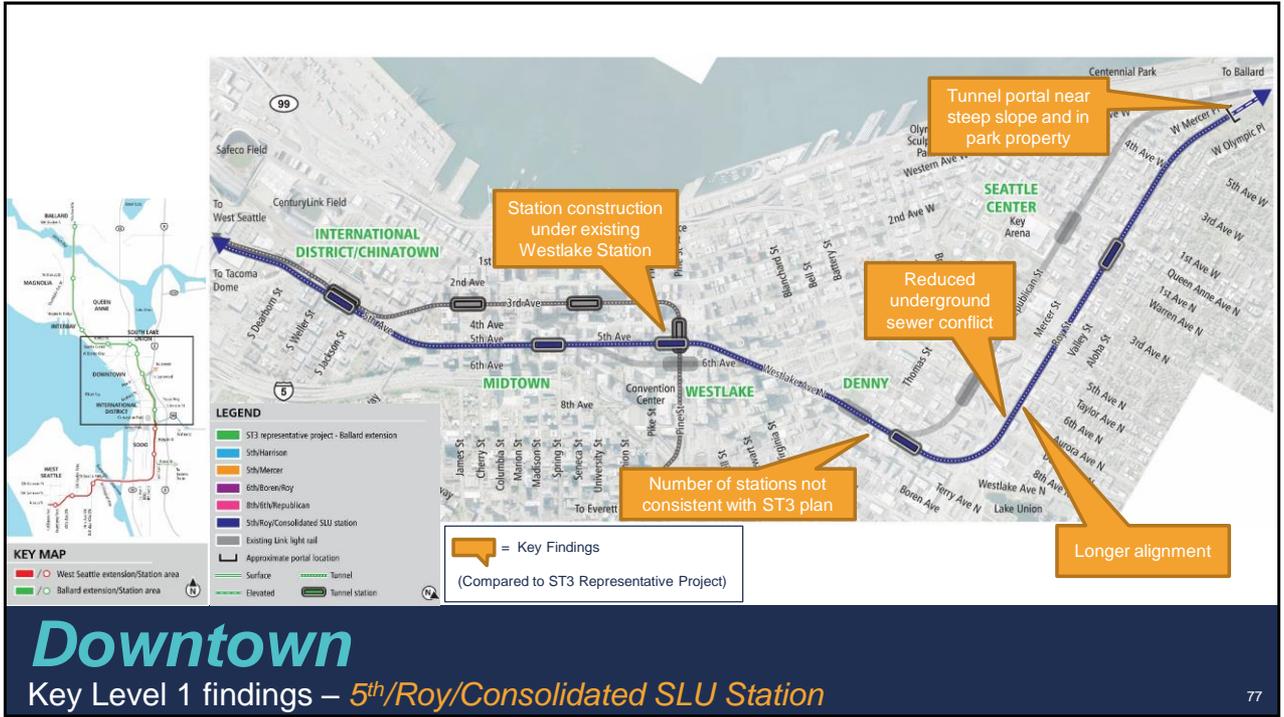




Downtown

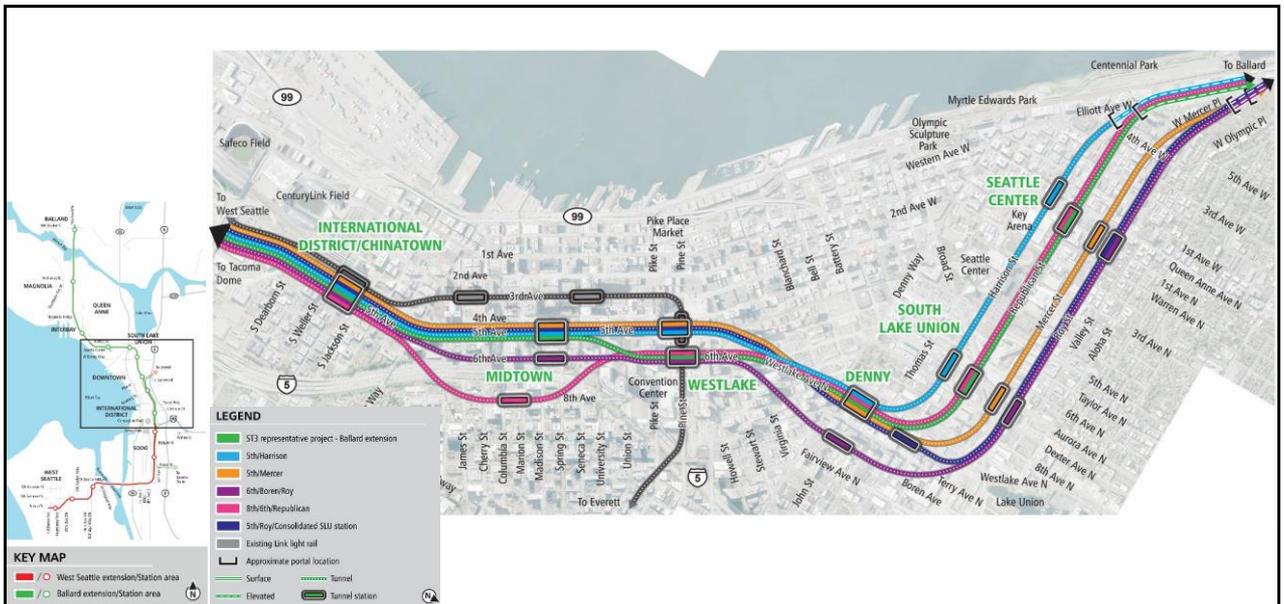
Key Level 1 findings – 8th/6th/Republican





Downtown summary

Alternatives with more potential	ST3 Representative Project	<ul style="list-style-type: none"> • Baseline for comparison
	5th/Harrison	<ul style="list-style-type: none"> • Avoids utility conflicts on Republican and station under SR 99 off-ramp • Decreased station coverage; potentially move Denny Station south
	6th/Boren/Roy	<ul style="list-style-type: none"> • Avoids utility conflicts on Republican and station under SR 99 off-ramp • Increases construction risk due to I-5 walls along 6th Ave; avoids tiebacks on 5th Ave
Alternatives with greater challenges	5th/Mercer	<ul style="list-style-type: none"> • Avoids utility conflicts on Republican and station under SR 99 off-ramp • Increases construction risk due to large sewer on Mercer
	5th/Roy/Consolidated SLU Station	<ul style="list-style-type: none"> • Avoids utility conflicts on Republican and station under SR 99 off-ramp • Consolidates stations; potentially not consistent with ST3
	8th/6th/Republican (First Hill)	<ul style="list-style-type: none"> • Increases construction risk due to two crossings under I-5 • First Hill station not consistent with ST3
Not practical suggestions	Use Downtown Seattle Transit Tunnel (DSTT)	<ul style="list-style-type: none"> • Existing DSTT capacity constraints
	Design for potential extensions to north and/or east	<ul style="list-style-type: none"> • Extensions to north and/or east not included in ST3 or long range plan



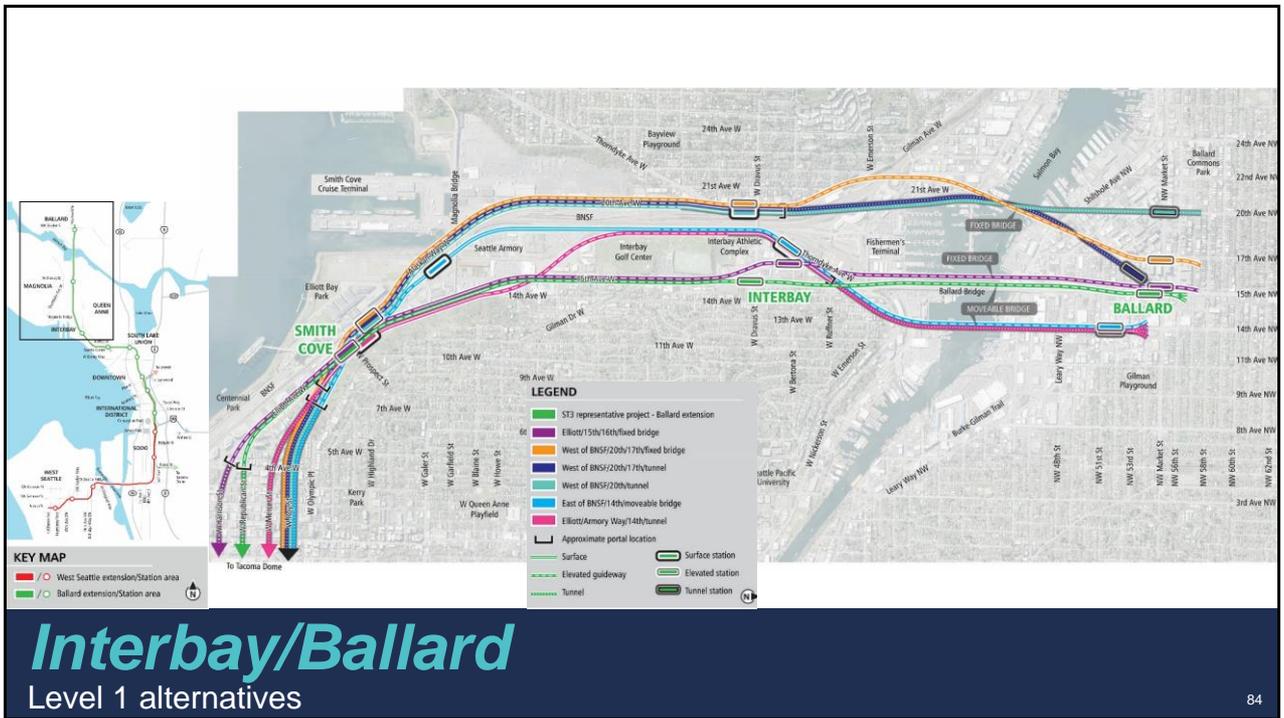
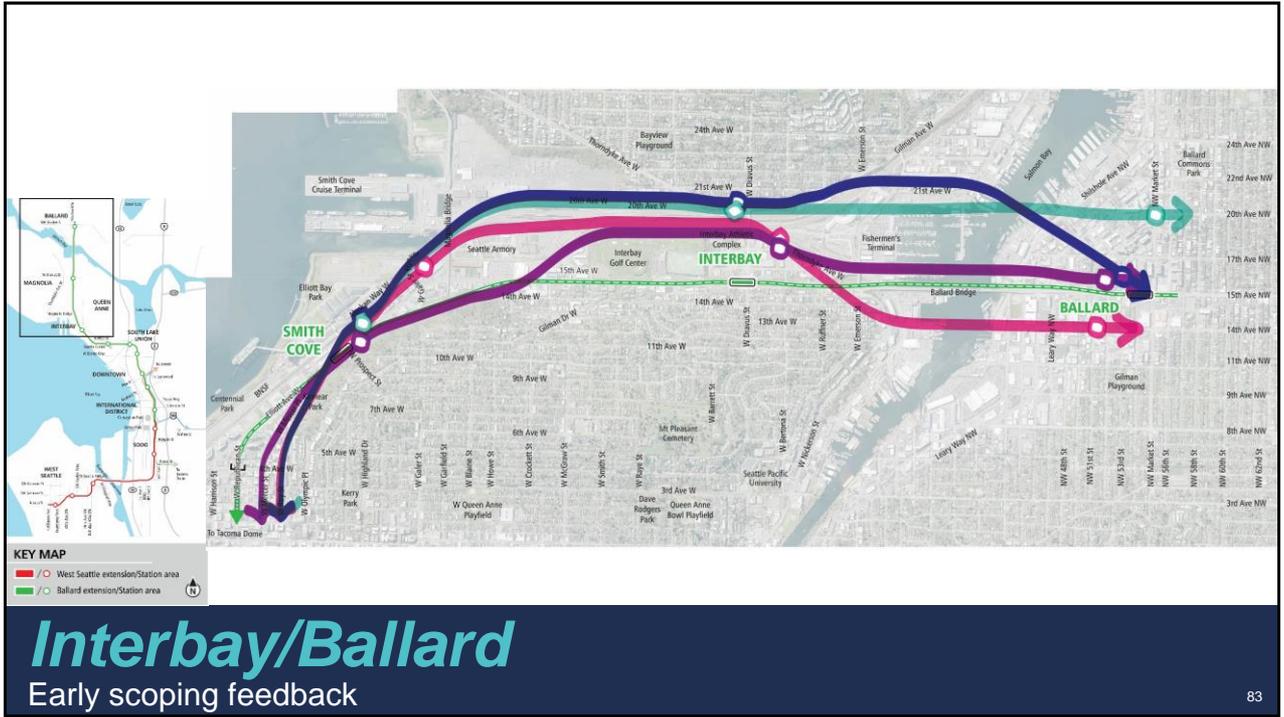
Downtown Level 1 alternatives

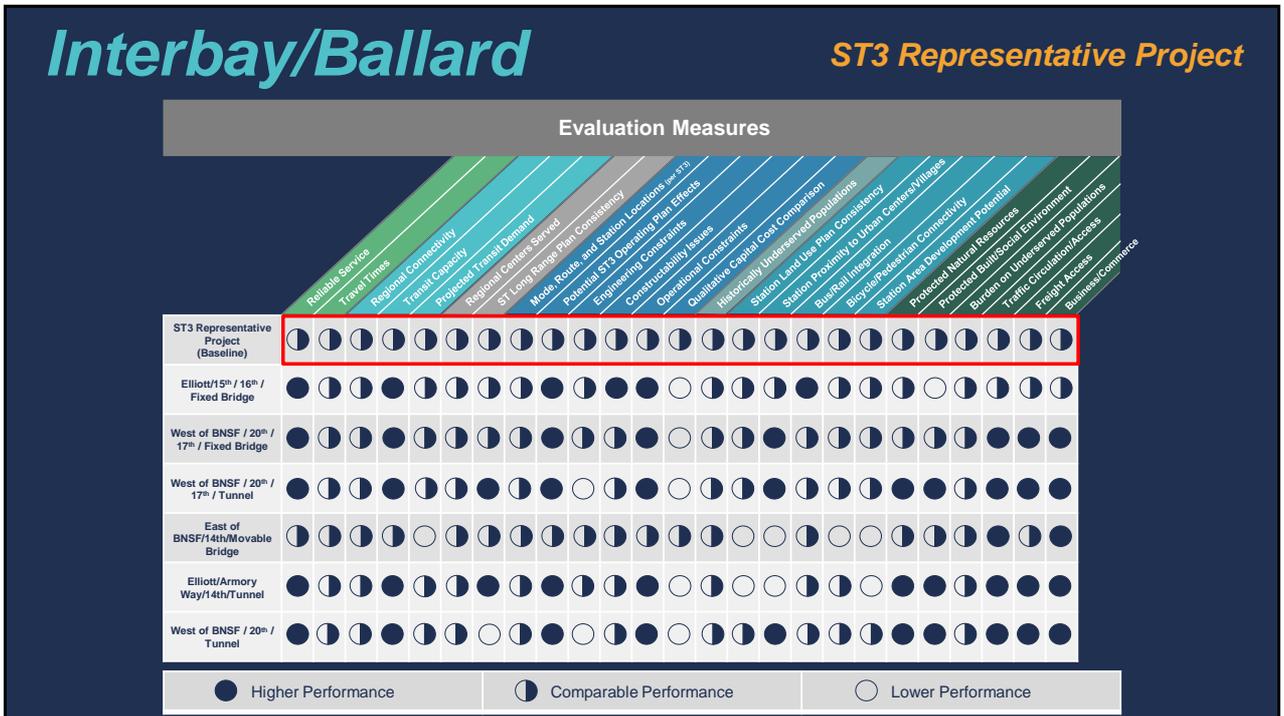
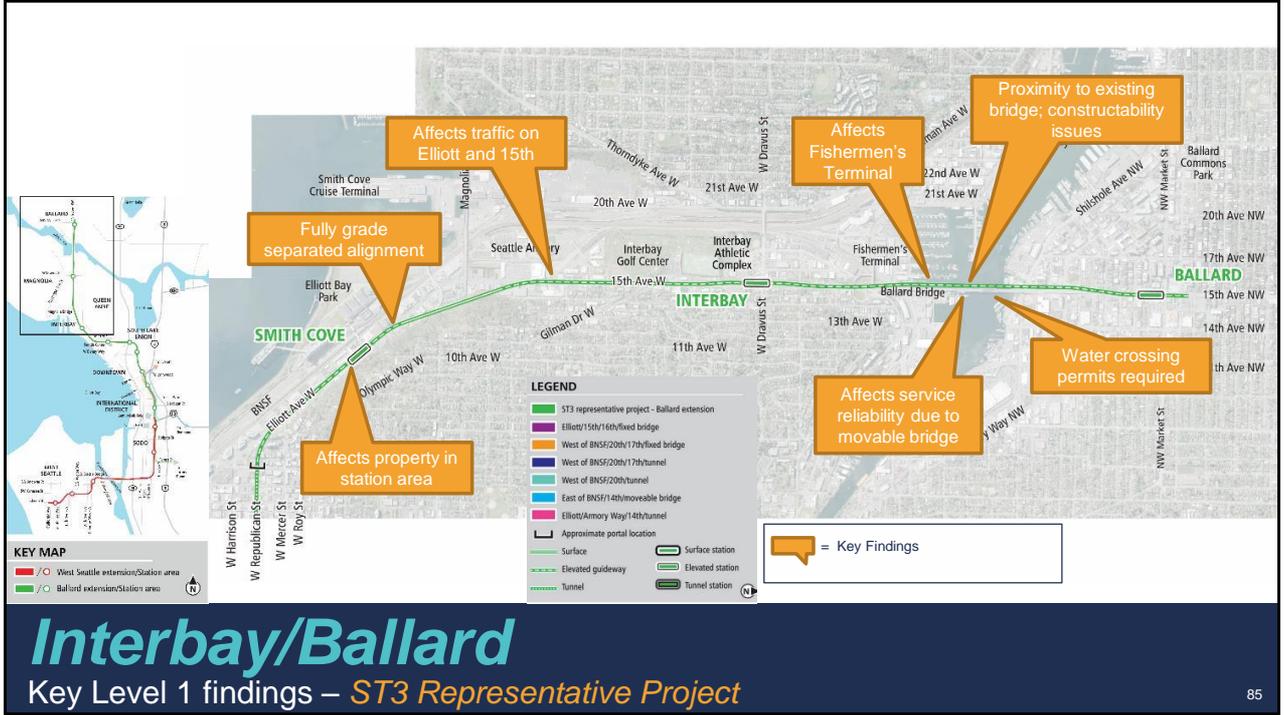
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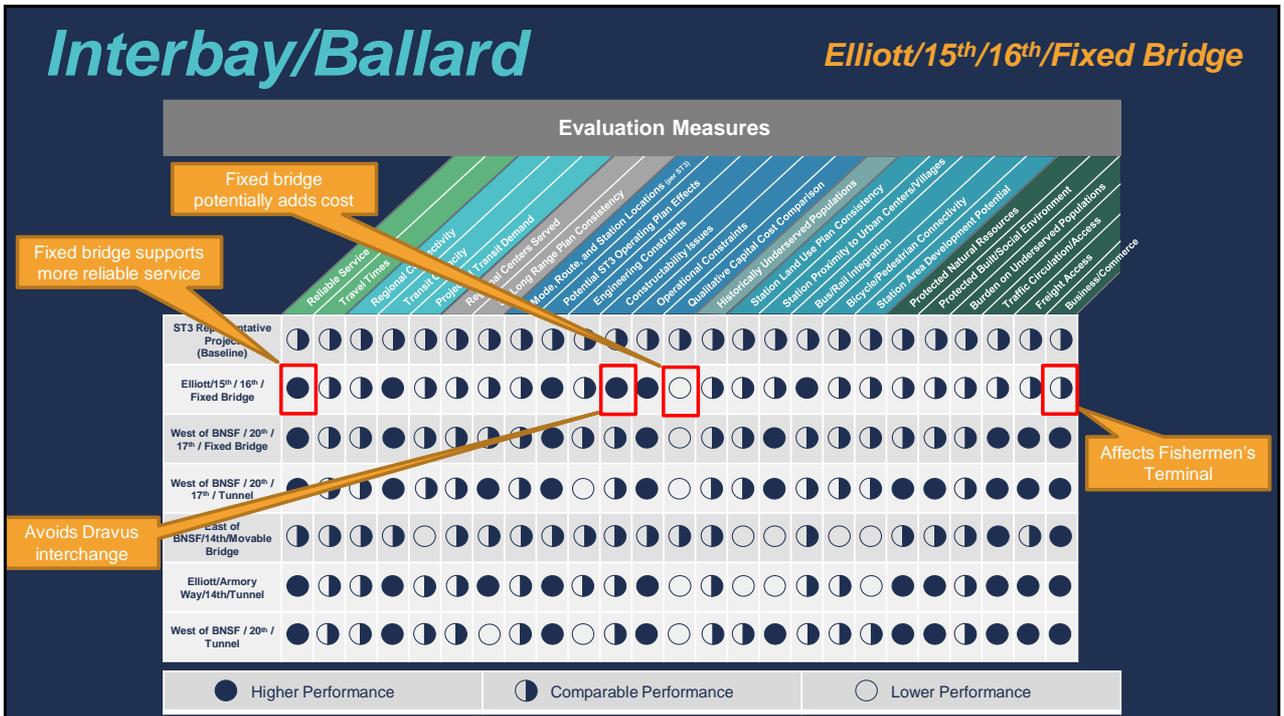
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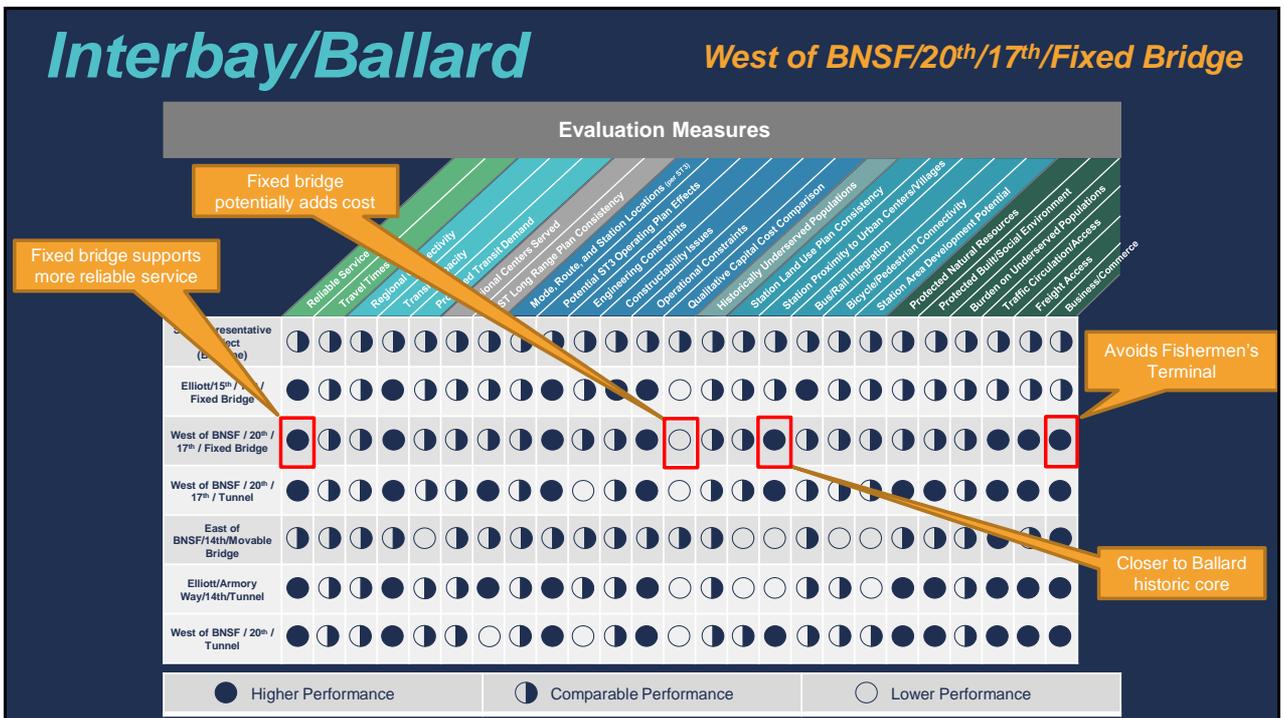
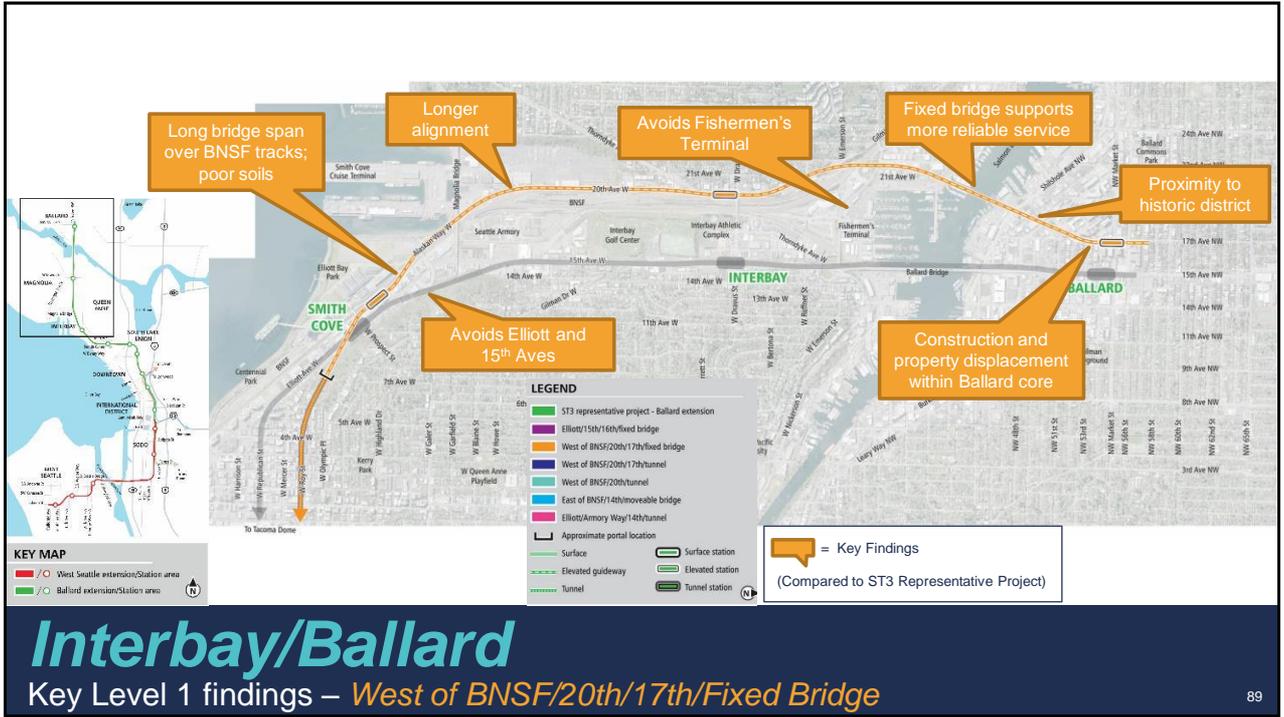
Interbay/Ballard

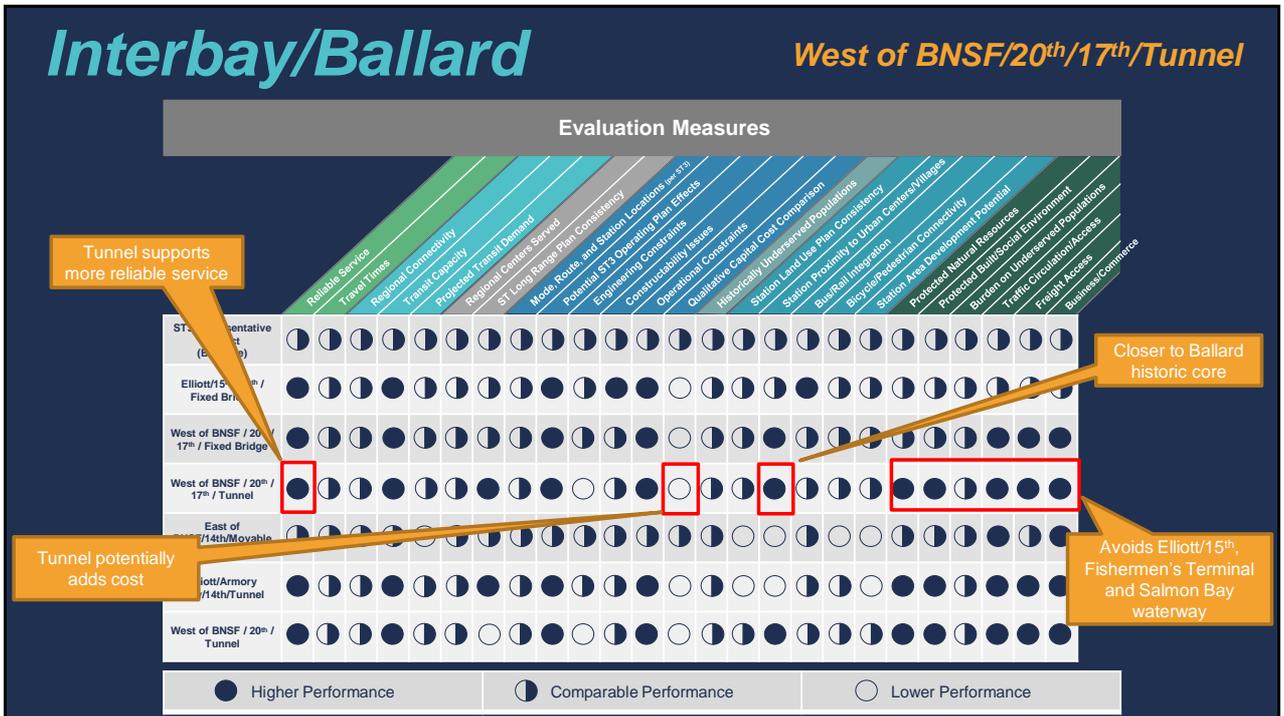
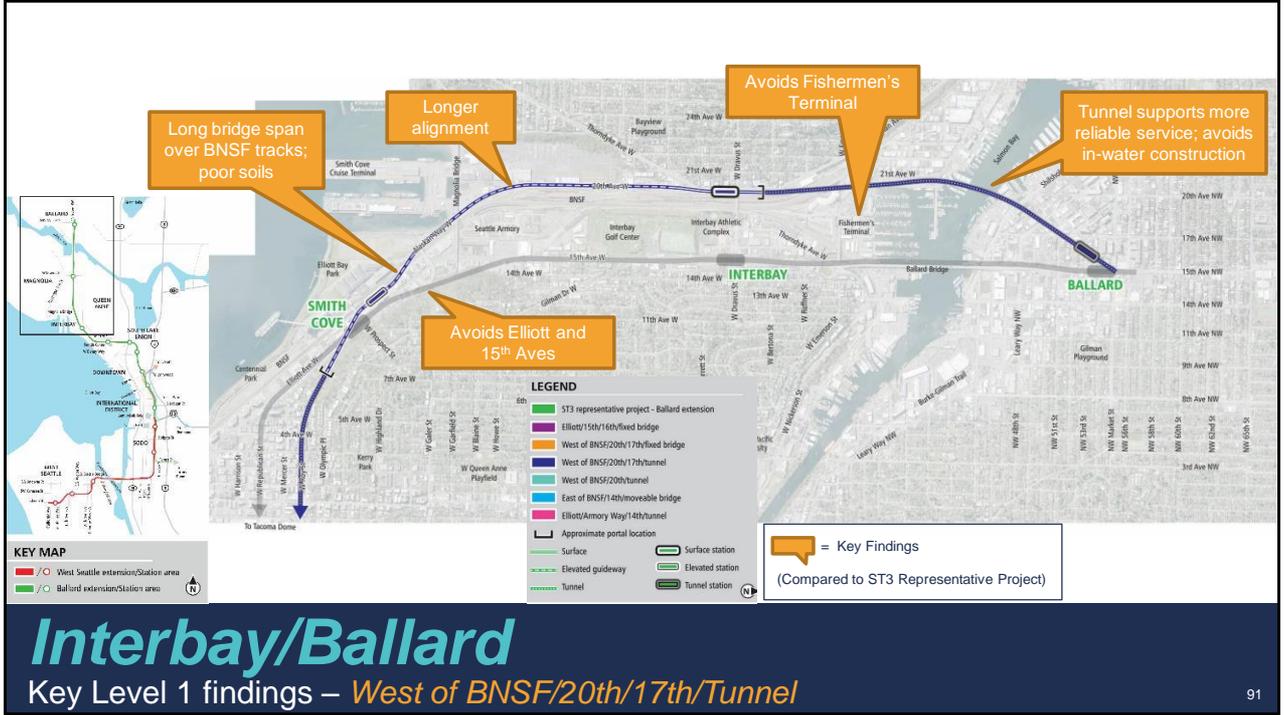
- ST3 Representative Project
- Elliott/15th/16th/Fixed Bridge
- West of BNSF/20th/17th/Fixed Bridge
- West of BNSF/20th/17th/Tunnel
- East of BNSF/14th/Movable Bridge
- Elliott/Armory Way/14th/Tunnel
- West of BNSF/20th/Tunnel

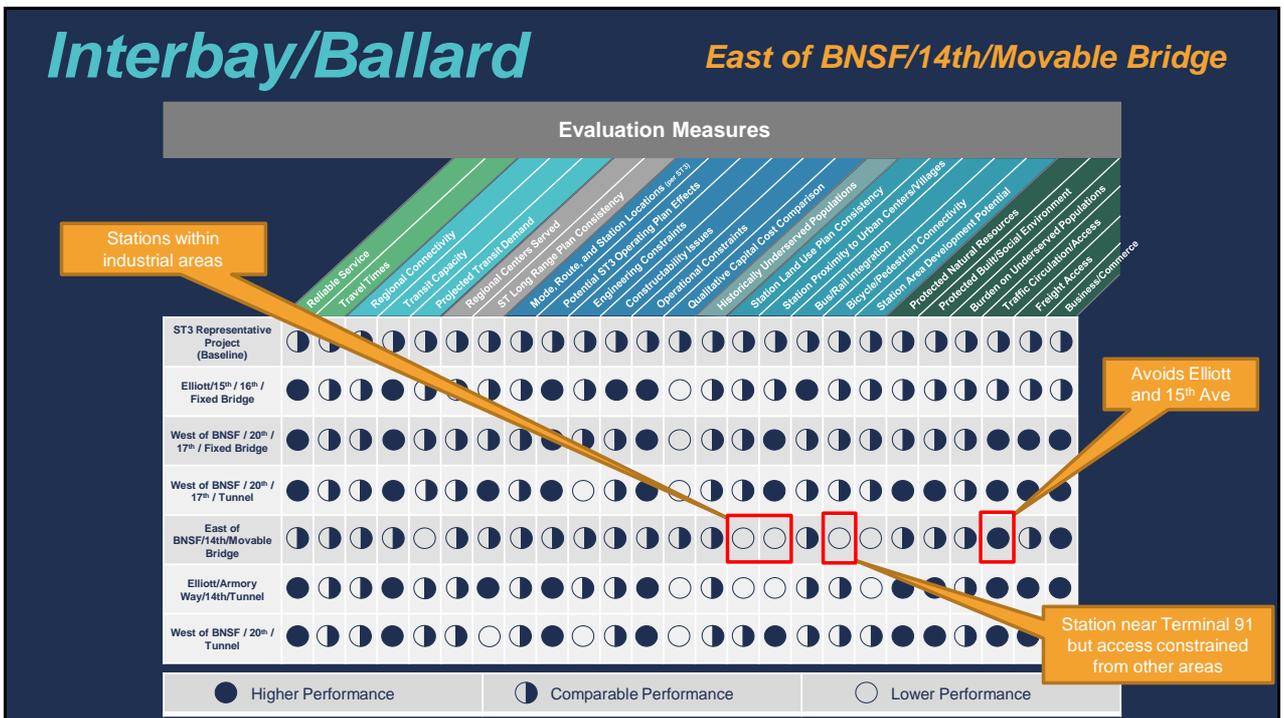
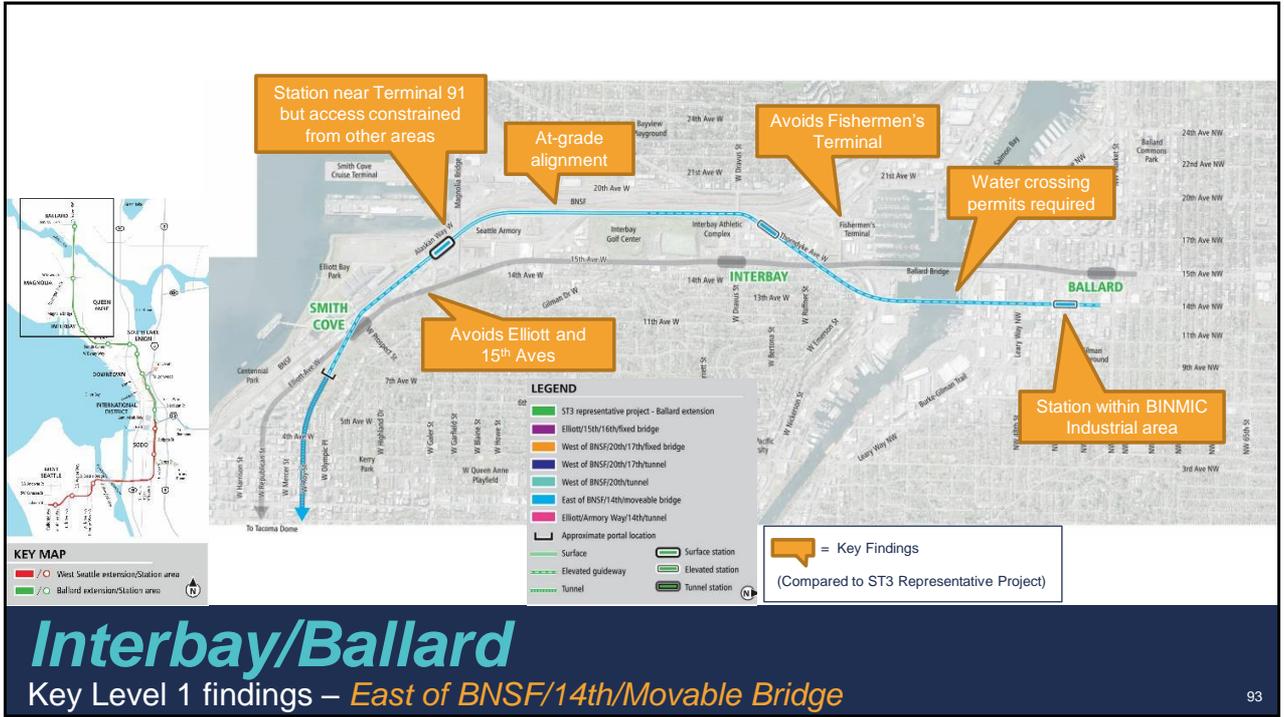


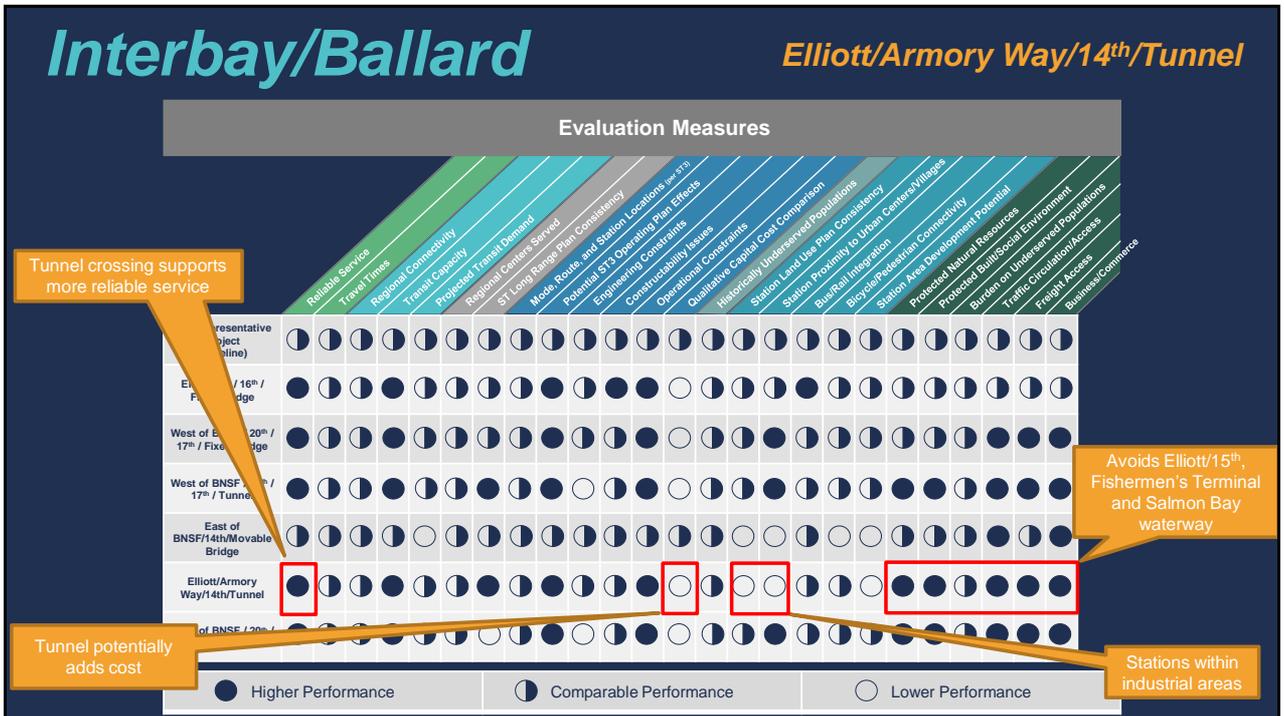
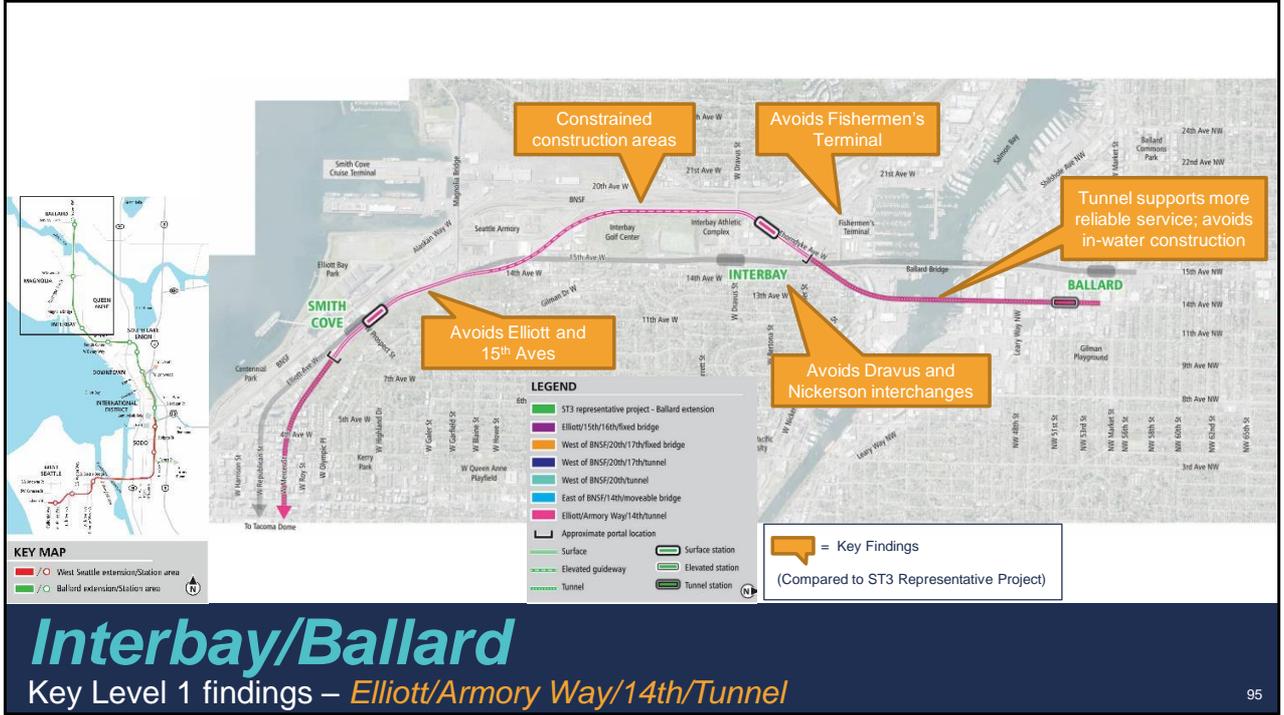


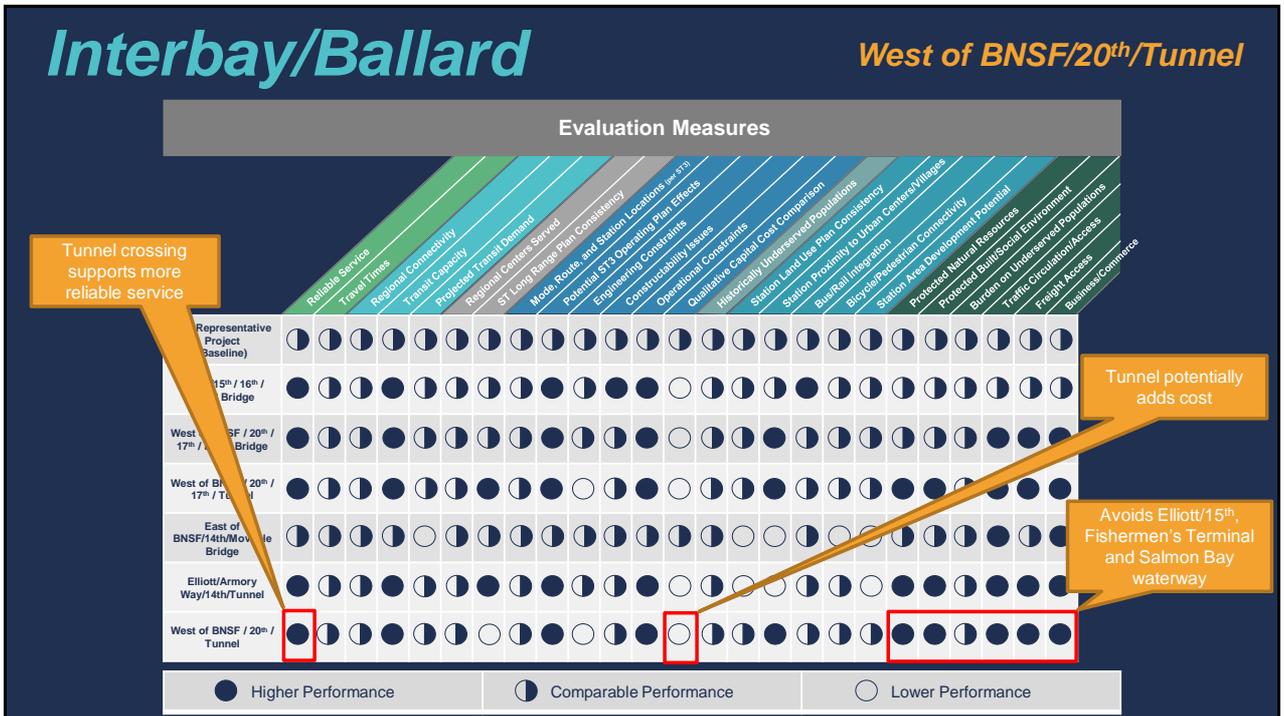
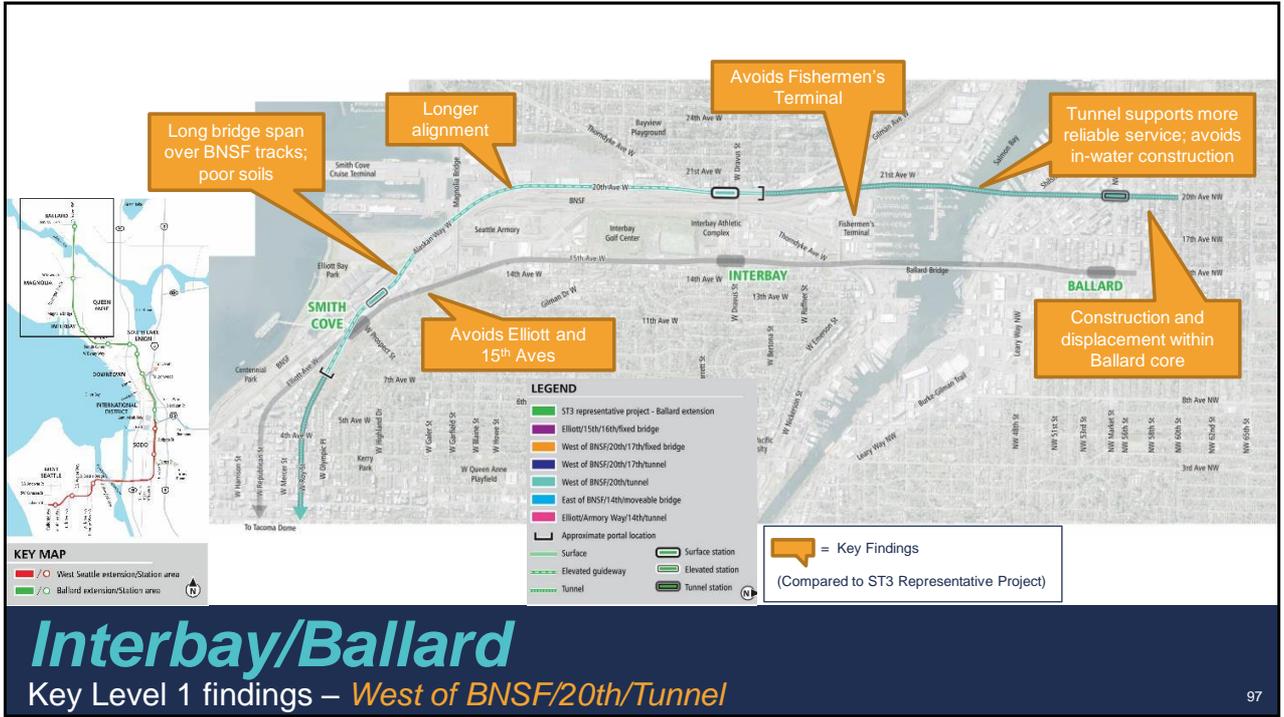






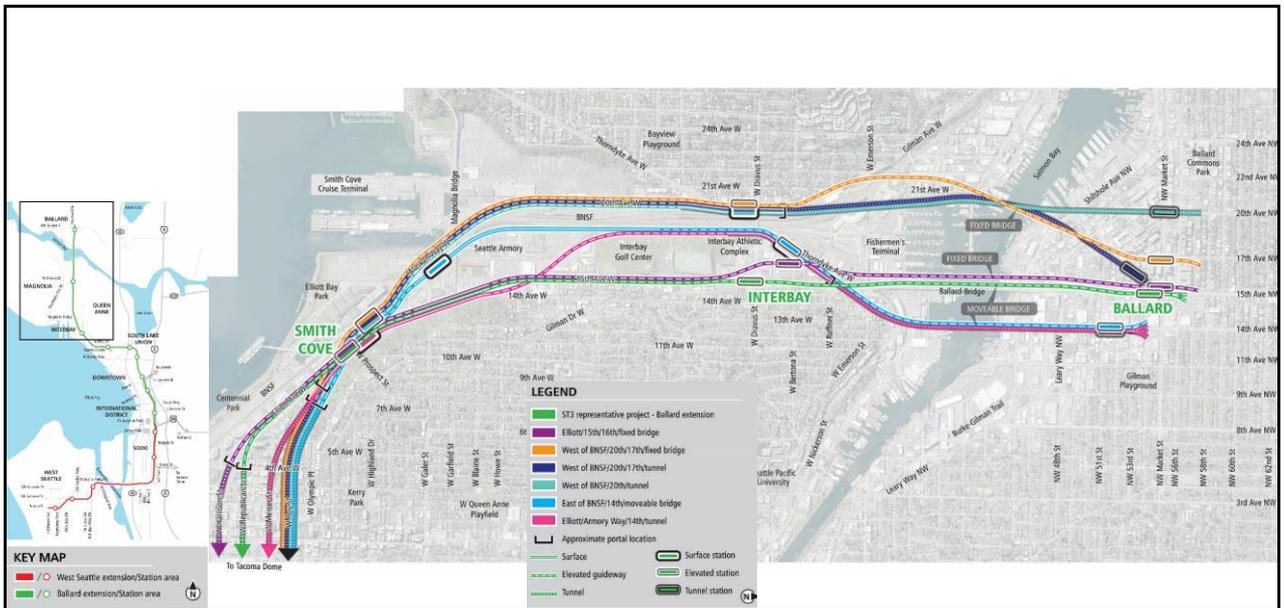






Interbay/Ballard summary

Alternatives with more potential	ST3 Representative Project	<ul style="list-style-type: none"> • Baseline for comparison
	Elliott/15 th /16 th /Fixed Bridge	<ul style="list-style-type: none"> • Avoids 15th Ave/Dravus interchange • Supports more reliable service (no bridge openings)
	West of BNSF/20 th /17 th /Fixed Bridge	<ul style="list-style-type: none"> • Avoids Elliott Ave, 15th Ave and Fishermen's Terminal • Supports more reliable service
	East of BNSF/14 th /Movable Bridge	<ul style="list-style-type: none"> • Avoids Elliott Ave, 15th Ave and Fishermen's Terminal • Locates station on 14th Ave within industrial area
	West of BNSF/20 th /17 th Tunnel	<ul style="list-style-type: none"> • Avoids Elliott Ave, 15th Ave, Fishermen's Terminal and Salmon Bay • Requires tunnel; may require 3rd Party funding
	Elliott/Armory Way/14 th /Tunnel	<ul style="list-style-type: none"> • Avoids Elliott Ave, 15th Ave, Fishermen's Terminal and Salmon Bay • Requires tunnel; may require 3rd Party funding
Alternatives with greater challenges	West of BNSF/20 th /Tunnel	<ul style="list-style-type: none"> • Avoids Elliott Ave, 15th Ave, Fishermen's Terminal and Salmon Bay • Requires longer tunnel; may require 3rd Party funding • Requires construction and displacement within Ballard core
Not practical suggestions	Tunnel through Queen Anne/Interbay	• Depth and length impractical; would affect downtown tunnel depth
	Extensions to 65 th , 85 th , Northgate	• Not included in ST3 plan
	Multi-modal Salmon Bay bridge	• ST3 plan defined project as rail-only bridge
	Eliminate or add stations	• Not consistent with ST3 plan



Interbay/Ballard

Level 1 alternatives



Sample recommendation worksheet

			Advance?	Comments/ Discussion
Alternatives with more potential	ST3 Representative Project			
	Elliott/15 th /16 th /Fixed Bridge	<ul style="list-style-type: none"> Avoids 15th Ave/Dravus interchange Supports more reliable service 		
	Alternative	<ul style="list-style-type: none"> Key findings 		
Alternatives with greater challenges	Alternative	<ul style="list-style-type: none"> Key findings 		
	Alternative	<ul style="list-style-type: none"> Key findings 		
Not practical suggestions	Alternative	<ul style="list-style-type: none"> Key findings 		
	Alternative	<ul style="list-style-type: none"> Key findings 		

