



# *West Seattle and Ballard Link Extensions*

*Elected Leadership Group Meeting | May 17, 2018*

# Agenda

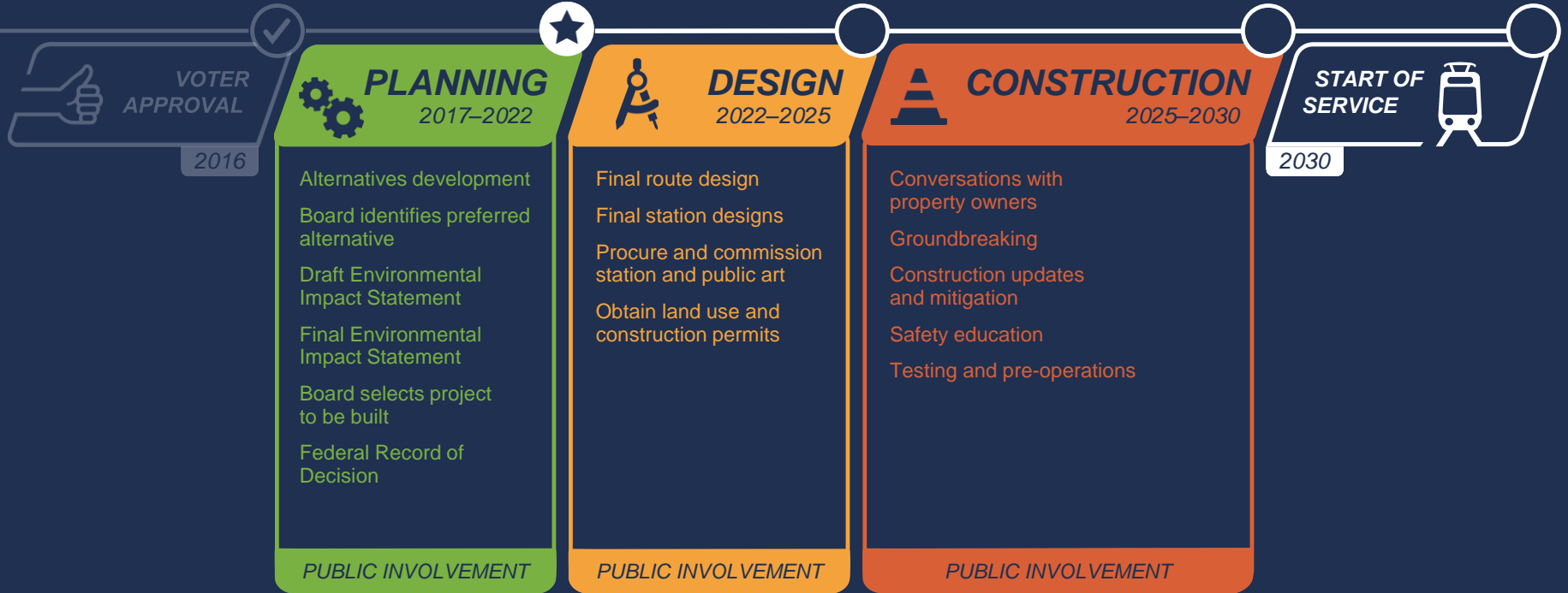
- › Community engagement and collaboration
- › Alternatives, results, feedback & SAG recommendations
  - › West Seattle
  - › SODO, Stadium, Chinatown/ID
  - › Downtown, South Lake Union, Seattle Center
  - › Smith Cove, Interbay, Ballard
- › Review recommendations and next steps



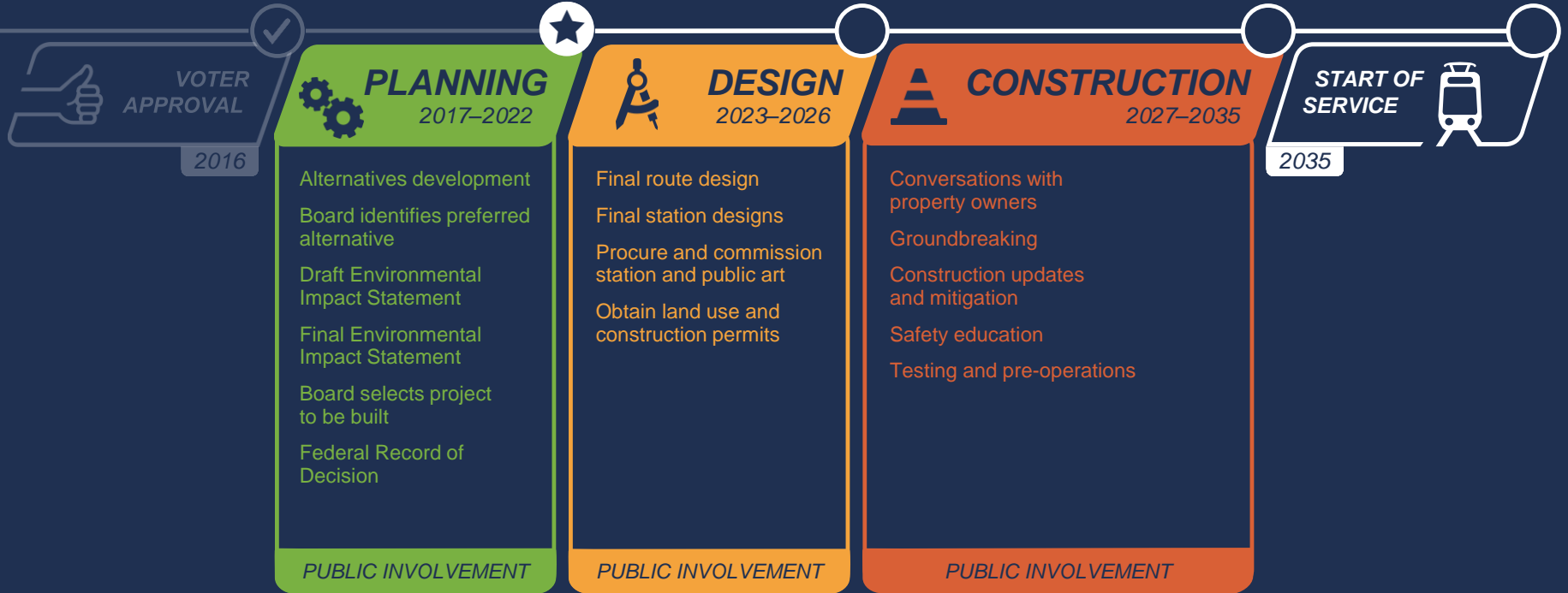
# ST3 Representative project

- Identifies mode, corridor, number of stations, general station locations
- Informs cost, schedule, operating needs

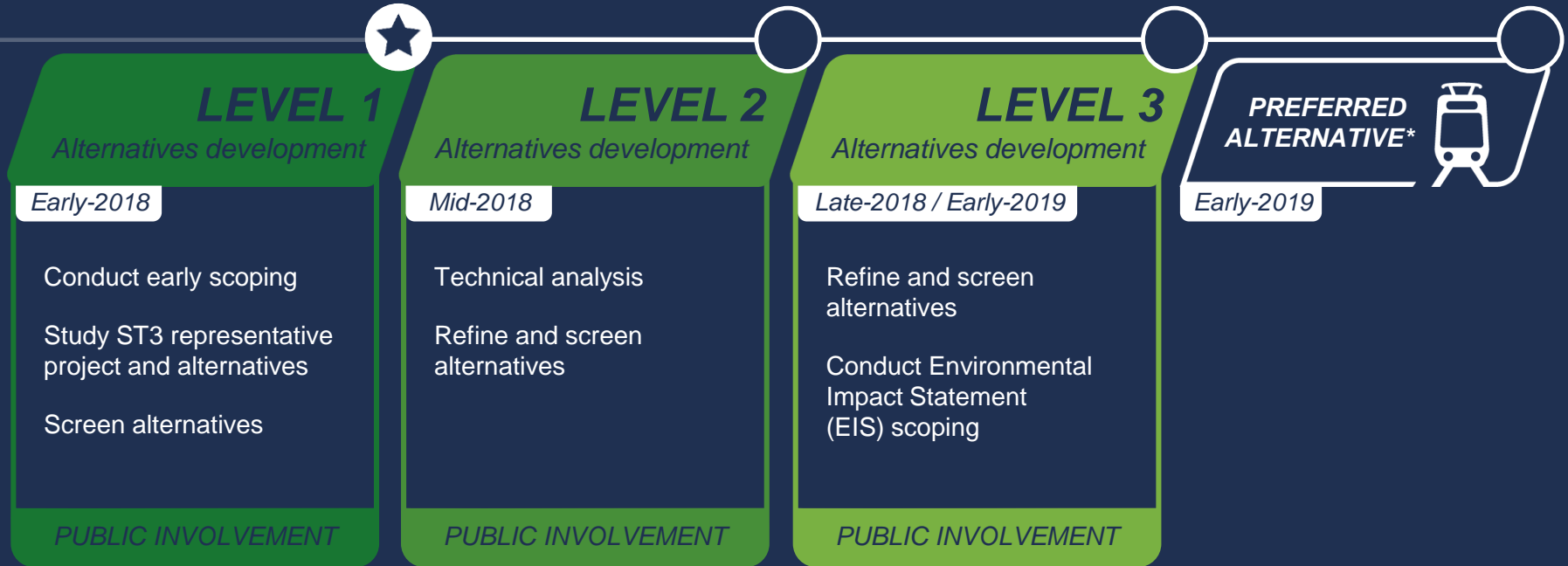
# West Seattle project timeline



# Ballard project timeline



# Alternatives development process



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

***Broad range of initial  
alternatives***

***Refine remaining  
alternatives***

***Further  
evaluation***

***Preferred Alternative  
and other EIS alternatives***

A light rail train is stopped at a station platform. Several people are visible: one man is boarding the train, a woman is walking towards the train, and a group of people is standing on the platform. The train has a white and blue color scheme with a stylized wave graphic. A blue circular sign with a white train icon is visible on a pole in the background. The overall scene is a public transit station.

# *Community engagement and collaboration*



# Community engagement and collaboration



Meeting dates subject to change.



## Early Scoping Summary Report

April 2018

# *Early Scoping*

- 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*



# *Neighborhood forums*

- **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

# *Stakeholder Advisory Group*

- Build **consensus** around key project decisions and work through project issues as needed
- Make **recommendations** at key milestones, including:
  - Identifying alternatives to study during environmental review
  - Identifying a preferred alternative
  - Highlight specific issues and trade-offs in the corridor



***Level 1 alternatives and  
evaluation***



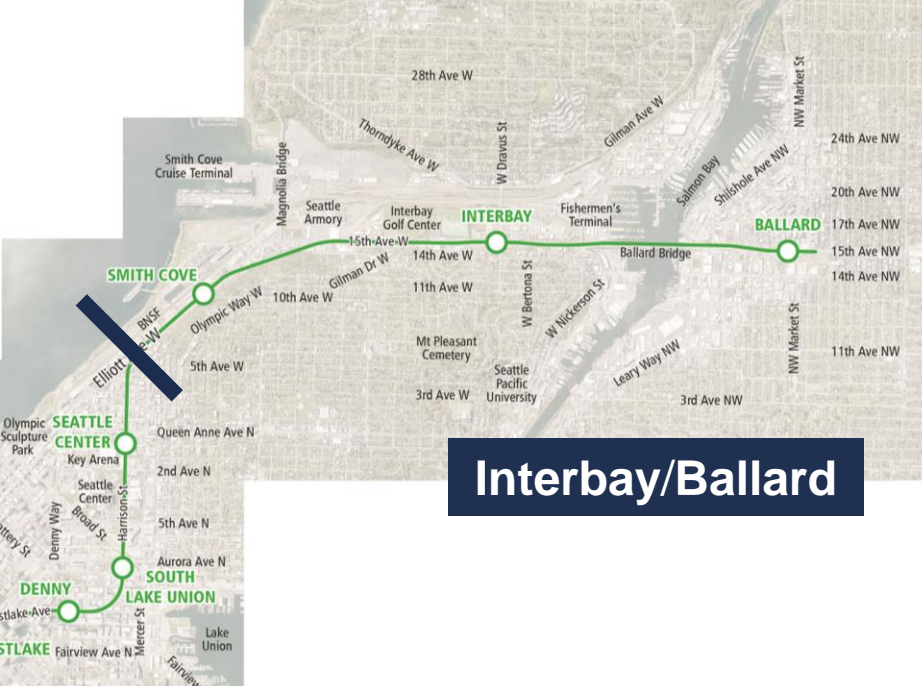
# West Seattle/ Duwamish



# SODO & Chinatown/ID

# Downtown

# Interbay/Ballard

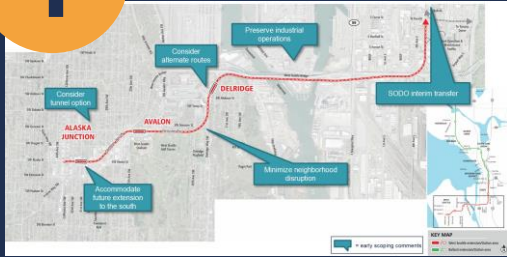


**KEY MAP**

- Red line with circle: West Seattle extension/Station area
- Green line with circle: Ballard extension/Station area
- Grey line with circle: Existing Link/Station area

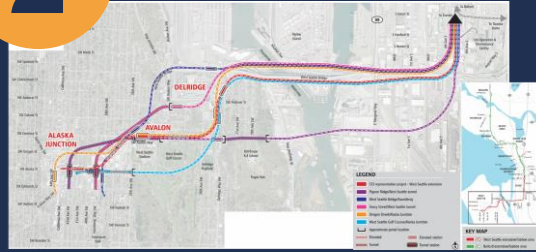
# ST3 Representative project

1



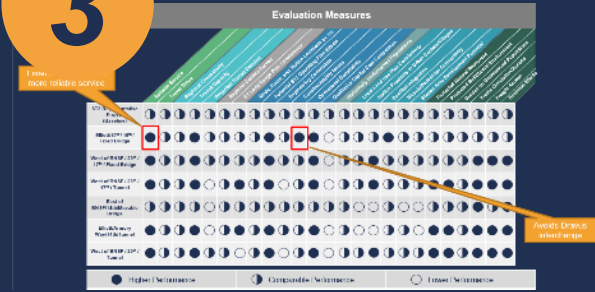
## Early Scoping feedback

2



## Map of segment alternatives

3



## Evaluation measures

4



## Neighborhood forums feedback

5

	ST3 Representative Project	• Baseline for comparison
Alternatives with more potential	Elliott/15th/16th Fixed Bridge	• Avoids 15th Ave/Dravus interchange • Supports more reliable service (no bridge openings)
	Alternative	• Key findings
Alternatives with greater challenges	Alternative	• Key findings
	Alternative	• Key findings
Not practical suggestions	Alternative	• Key findings
	Alternative	• Key findings

## Segment summary

6



## SAG recommendations

# Sample segment summary

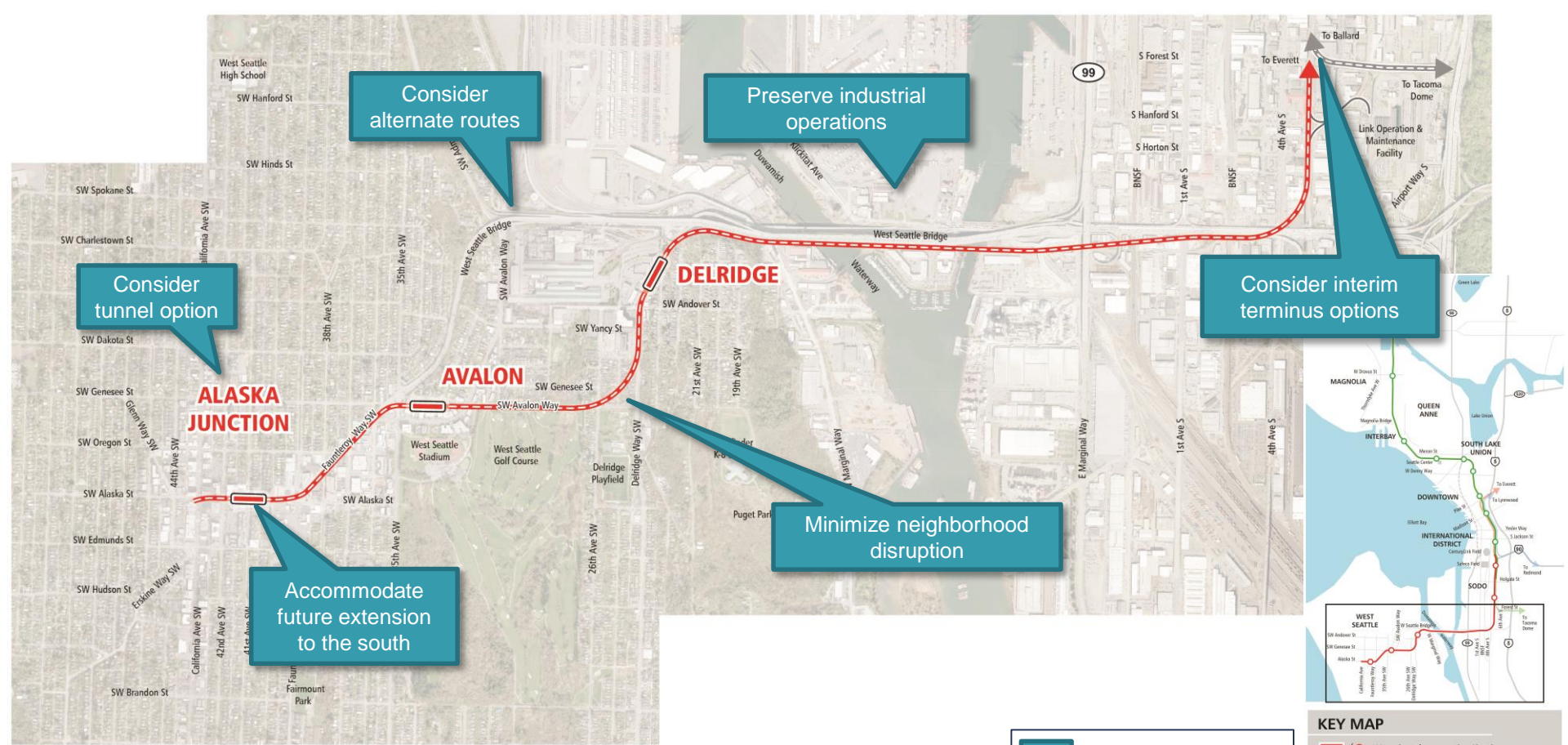
	ST3 Representative Project	<ul style="list-style-type: none"> <li>• Baseline for comparison</li> </ul>
Alternatives with more potential	Alaska Junction	<ul style="list-style-type: none"> <li>• Avoids Fauntleroy and Alaska; better orientation south</li> <li>• Affects Oregon St and 44<sup>th</sup> Ave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

Funding identified?

Funding not identified?

**may require 3<sup>rd</sup> Party funding**





Consider tunnel option

Consider alternate routes

Preserve industrial operations



Consider interim terminus options


Accommodate future extension to the south

Minimize neighborhood disruption

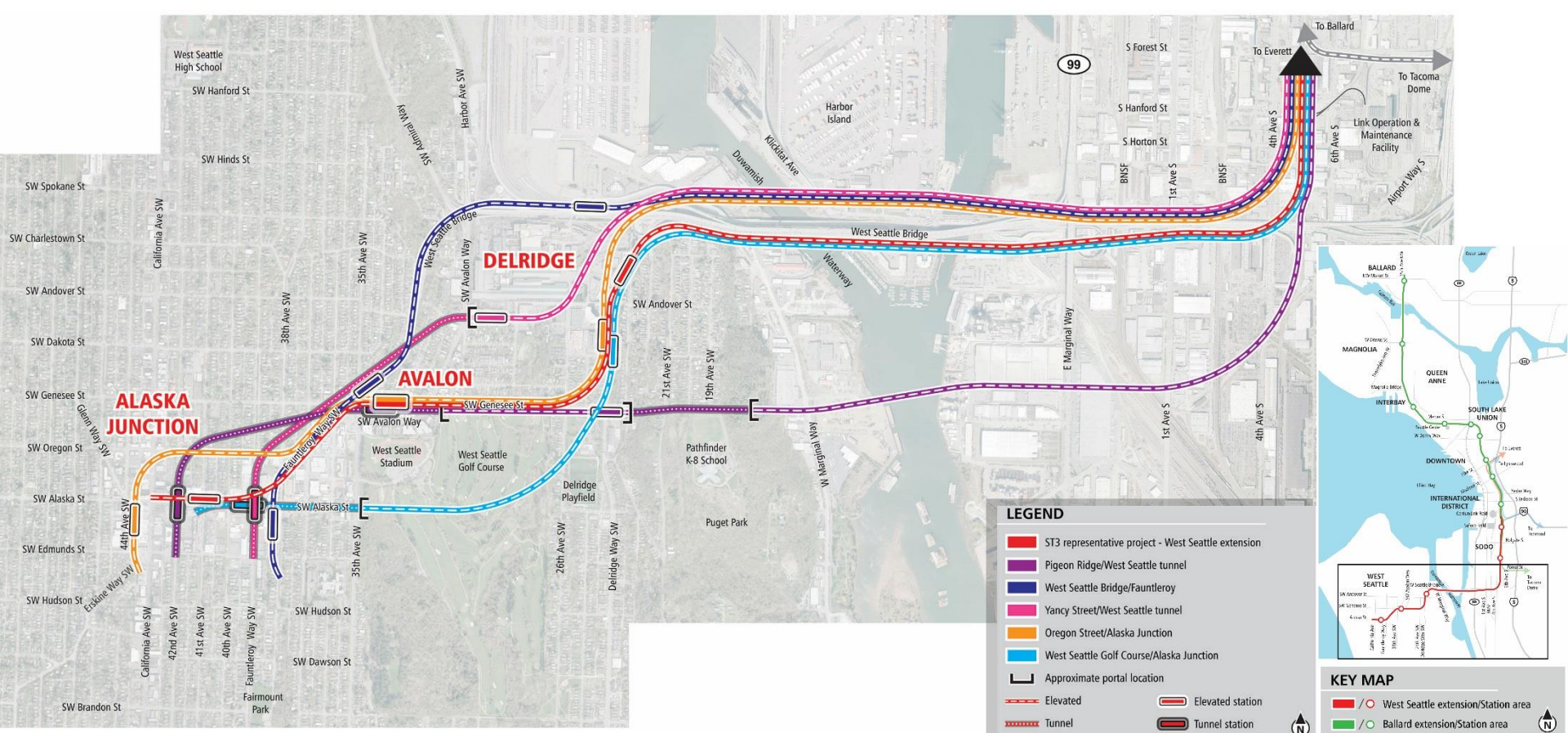
 = early scoping comments

**KEY MAP**

-  West Seattle extension/Station area
-  Ballard extension/Station area



# West Seattle/Duwamish – Early Scoping feedback



# West Seattle / Duwamish – Level 1 alternatives



# West Seattle / Duwamish evaluation

## Evaluation Measures

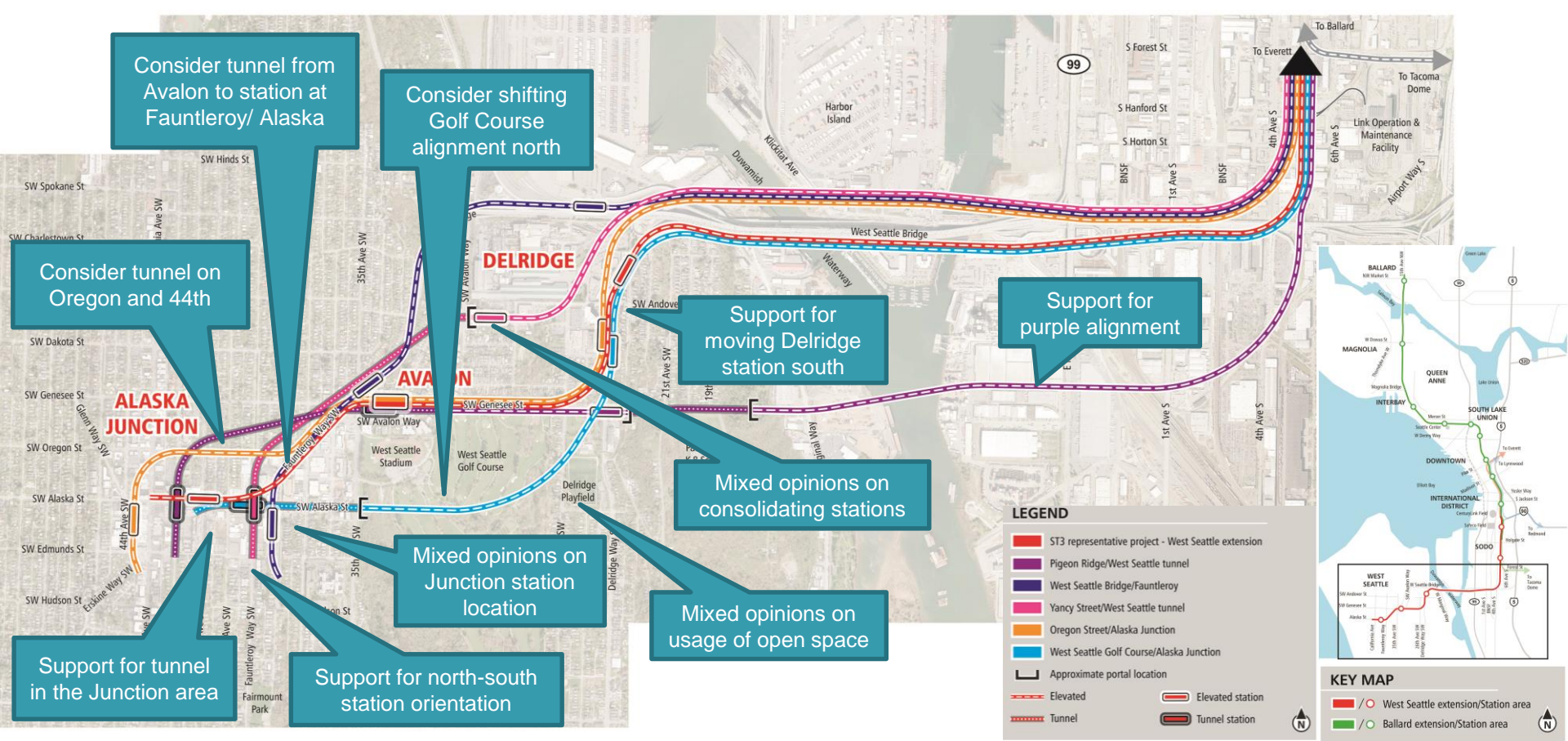
Qualitative Capital Costs

Station proximity to Urban Centers/Villages

	Reliable Service	Travel Time	Regional Connectivity	Transit Capacity	Protected Regional Demand	ST Long Range	Mode, Route, and Station Consistency	Potential ST3 Locations (per ST3)	Engineering Constraints	Constructability Issues	Operational Constraints	Historically Underserved Populations	Station Land Use Plan Consistency	Station Proximity to Urban Centers/Villages	Bus/Rail Integration	Bicycle/Pedestrian Connectivity	Station Area Development Potential	Protected Natural Resources	Burdened Areas	Traffic Circulation/Access	Freight Access	Business/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	●	●	●	○	●	○	●	●	●	○	●	○	○	○	○	○	○	○	○	○	○	○	○







Freight Access / Business Concerns

● Higher Performance    ● Comparable Performance    ○ Lower Performance









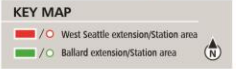
# West Seattle/Duwamish – Neighborhood forums feedback

# West Seattle / Duwamish summary

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

# West Seattle / Duwamish – SAG recommendations

	Alternative		Carry forward?	Do not carry forward?	Notes/Comments
Alternatives with more potential	ST3 Representative Project				
	Oregon Street/Alaska Junction		✓		Explore elevated and tunnel options
	West Seattle Bridge/Fauntleroy			✓	
	Pigeon Ridge/West Seattle Tunnel		✓		
Alternatives with greater challenges	Yancy Street/West Seattle Tunnel			✓	
	West Seattle Golf Course/Alaska Junction (Tunnel)			✓	Add Avalon station, modify to reduce 4(f) impact
Not practical suggestions	Tunnel under Duwamish			✓	
	West Seattle Bridge			✓	
	Gondola, rail/bus bridge			✓	
	Extensions to Alki, Admiral, etc.			✓	



= early scoping comments

# SODO & Chinatown/ID – Early Scoping feedback <sup>23</sup>





**KEY MAP**

- / ○ West Seattle extension/Station area
- / ○ Ballard extension/Station area

**LEGEND**

- / — ST3 representative project - West Seattle extension/Ballard extension
- / — Massachusetts tunnel portal - West Seattle extension/Ballard extension
- / — Surface E-3 - West Seattle extension/Ballard extension
- Existing Link light rail
- Approximate portal location
- New roadway overcrossing
- Surface
- - - Elevated guideway
- - - - - Tunnel
- Surface station
- Elevated station

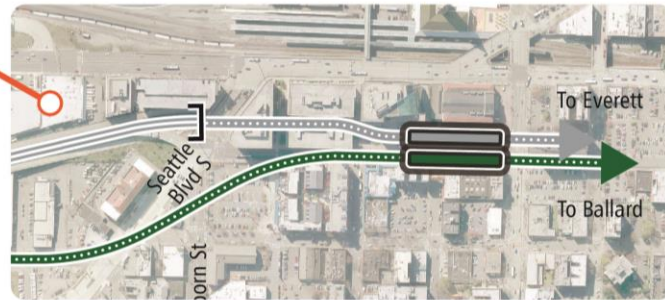


# SODO & Chinatown/ID – Level 1 alternatives





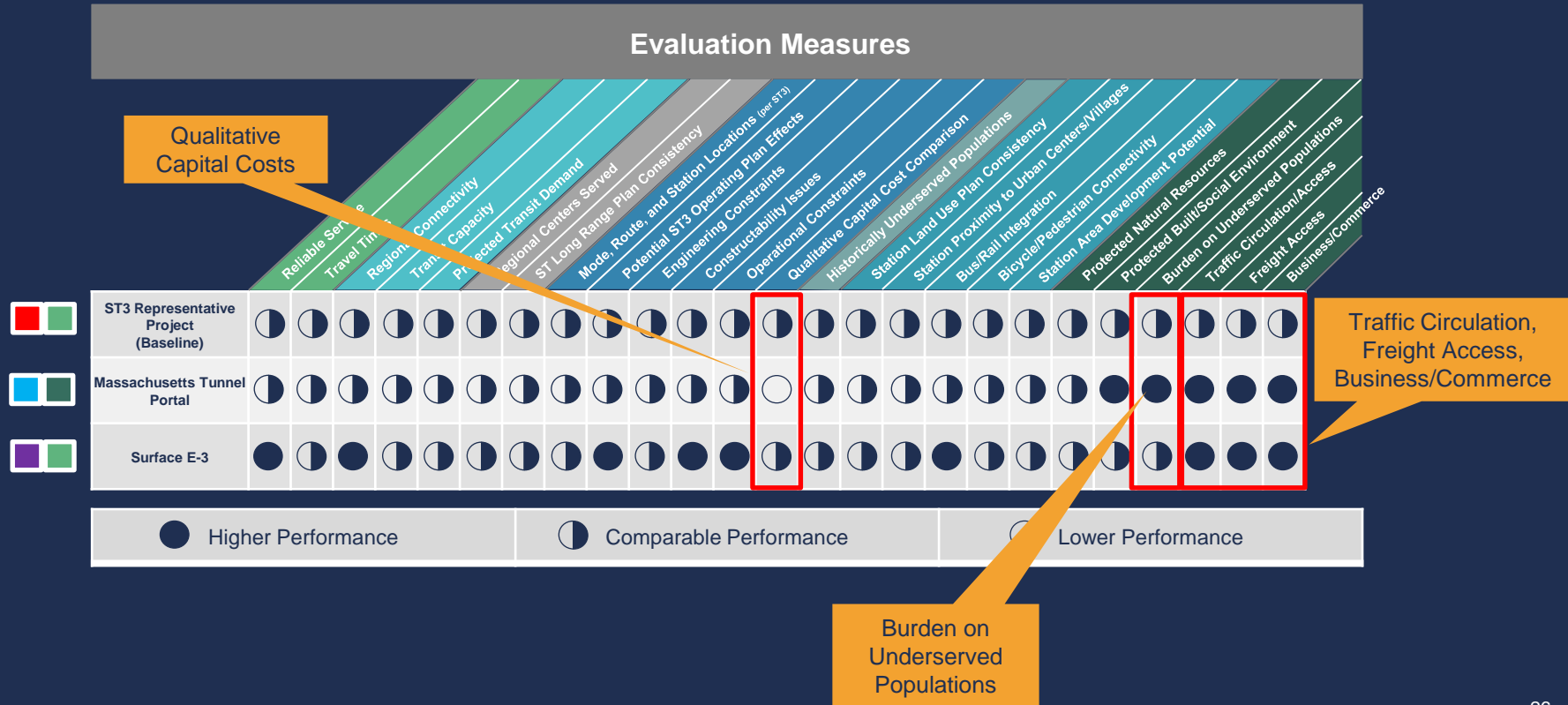
**Station location alternative (straddle S Jackson St)**  
 Note: applicable to both cut and cover and bored tunnel alternatives

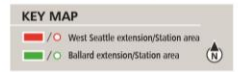


**Bored tunnel alternative**  
 Reduces in-street cut-and-cover construction from 1,600' to 400'

# Chinatown/ID station alternatives

# SODO & Chinatown/ID evaluation





Concern about displacing bike lanes and bus lanes

Consider adding grade-separated roadways

Consider ways to reduce cut-and-cover construction impacts (including potential 4th Ave station location)



Support for reducing cut-and-cover construction






Support for grade-separated roadways

Support for stations on both lines




Mixed opinions on closing Royal Brougham

# SODO & Chinatown/ID – Neighborhood forums feedback

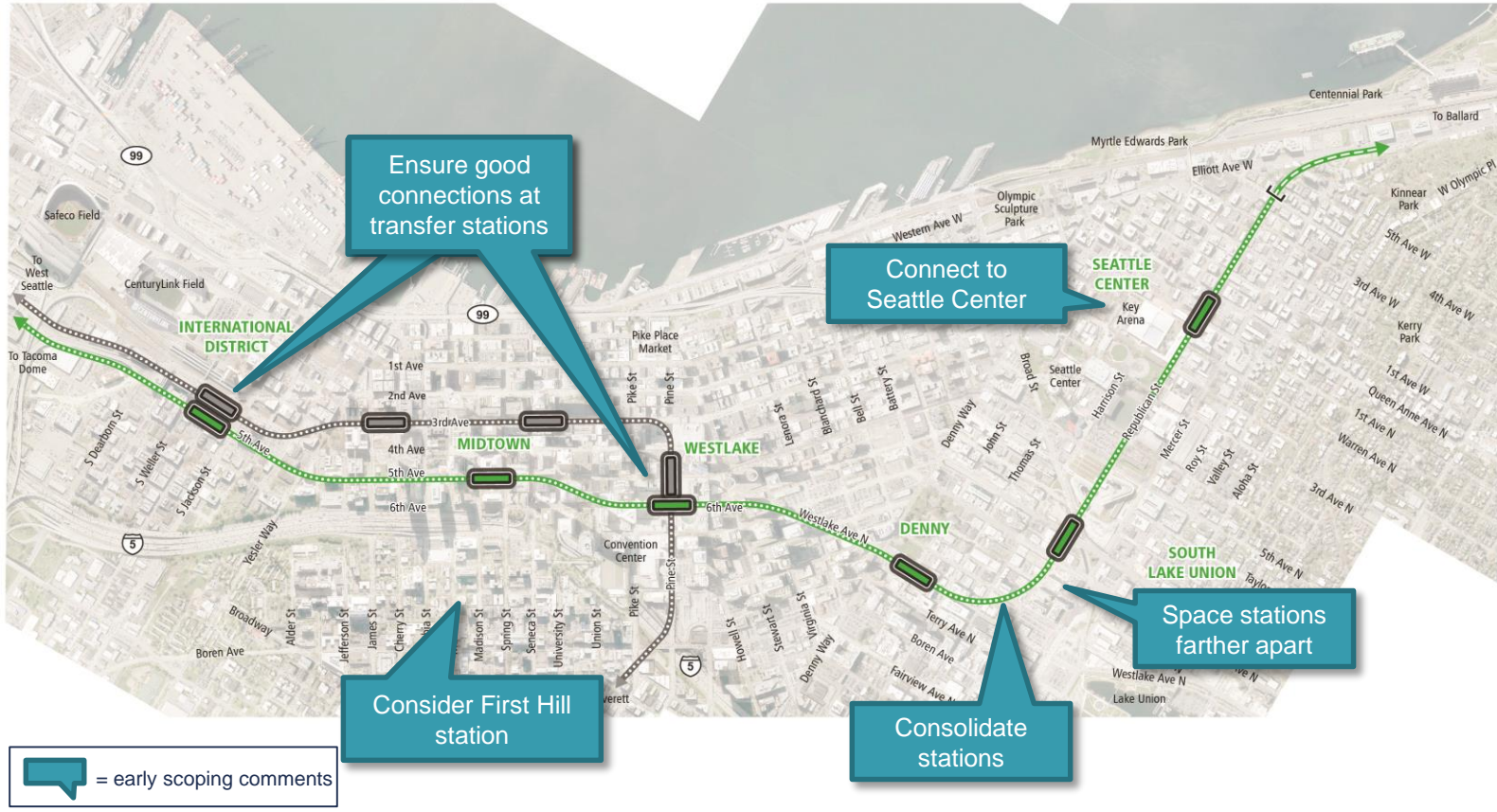
# SODO & Chinatown/ID summary

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

# SODO & Chinatown/ID – SAG recommendations

	Alternative	Carry forward?	Do not carry forward?	Notes/Comments
Alternatives with more potential	ST3 Representative Project 			
	Surface E-3 	✓		
	Massachusetts Tunnel Portal 	✓		Consider hybrid with full grade separation
Not practical suggestions	Maintain buses on E-3		✓	Need to study impacts to buses during construction and long term
	First Ave alignment	✓		Explore modifications that meet operational requirements, including potential additional station to serve First Ave
	Design for potential extension south to Georgetown		✓	
New suggestion	Alternative station location	✓		Consider 4 <sup>th</sup> Ave Station in Chinatown/ID

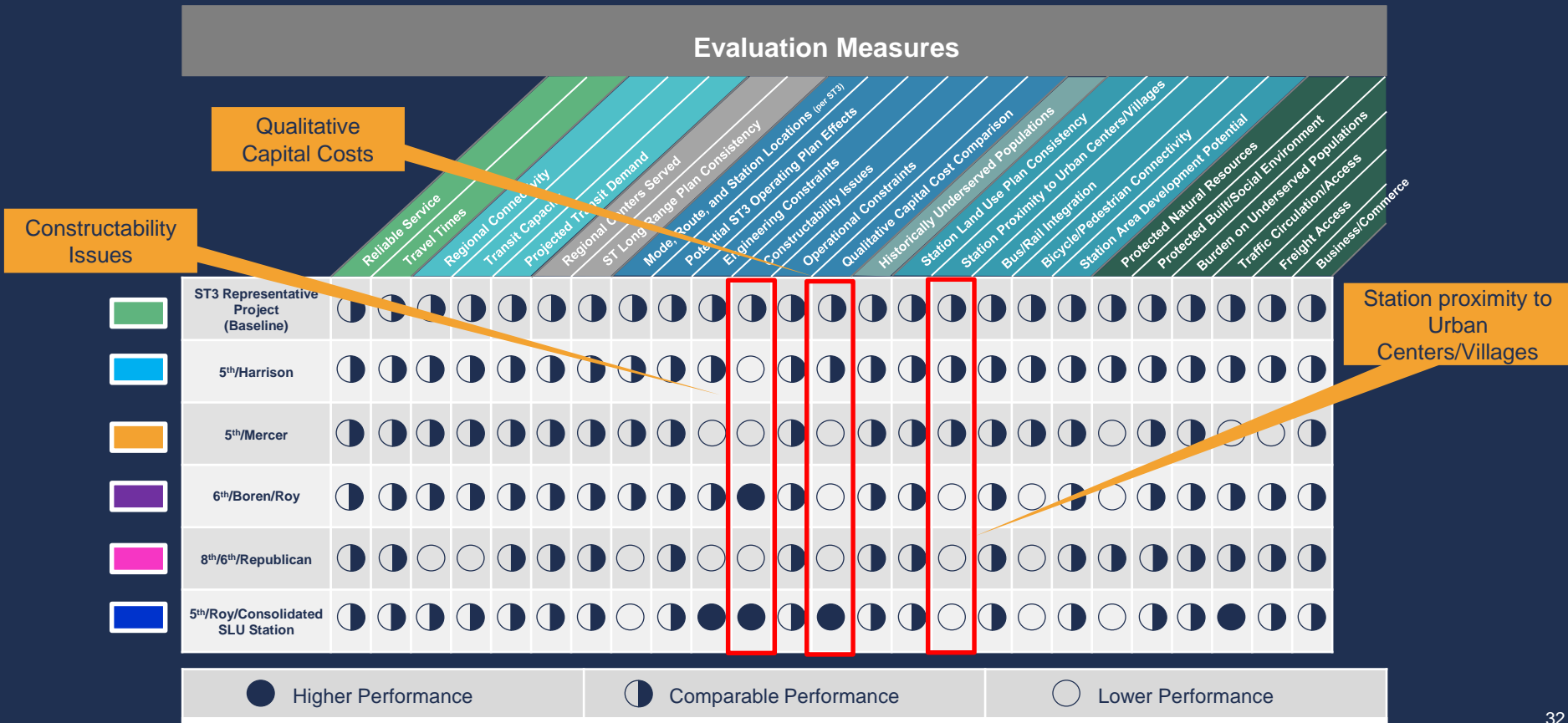




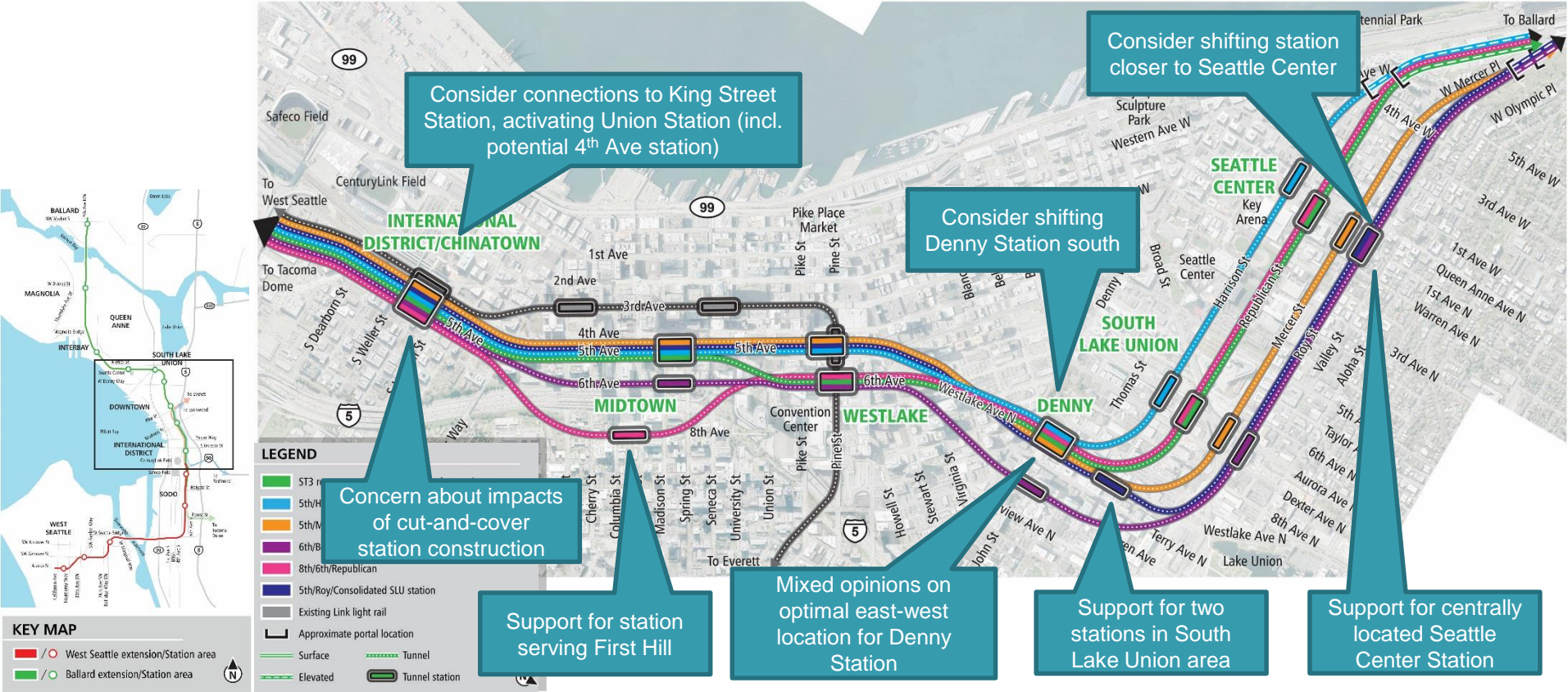
# Downtown – Early Scoping feedback



# Downtown evaluation



















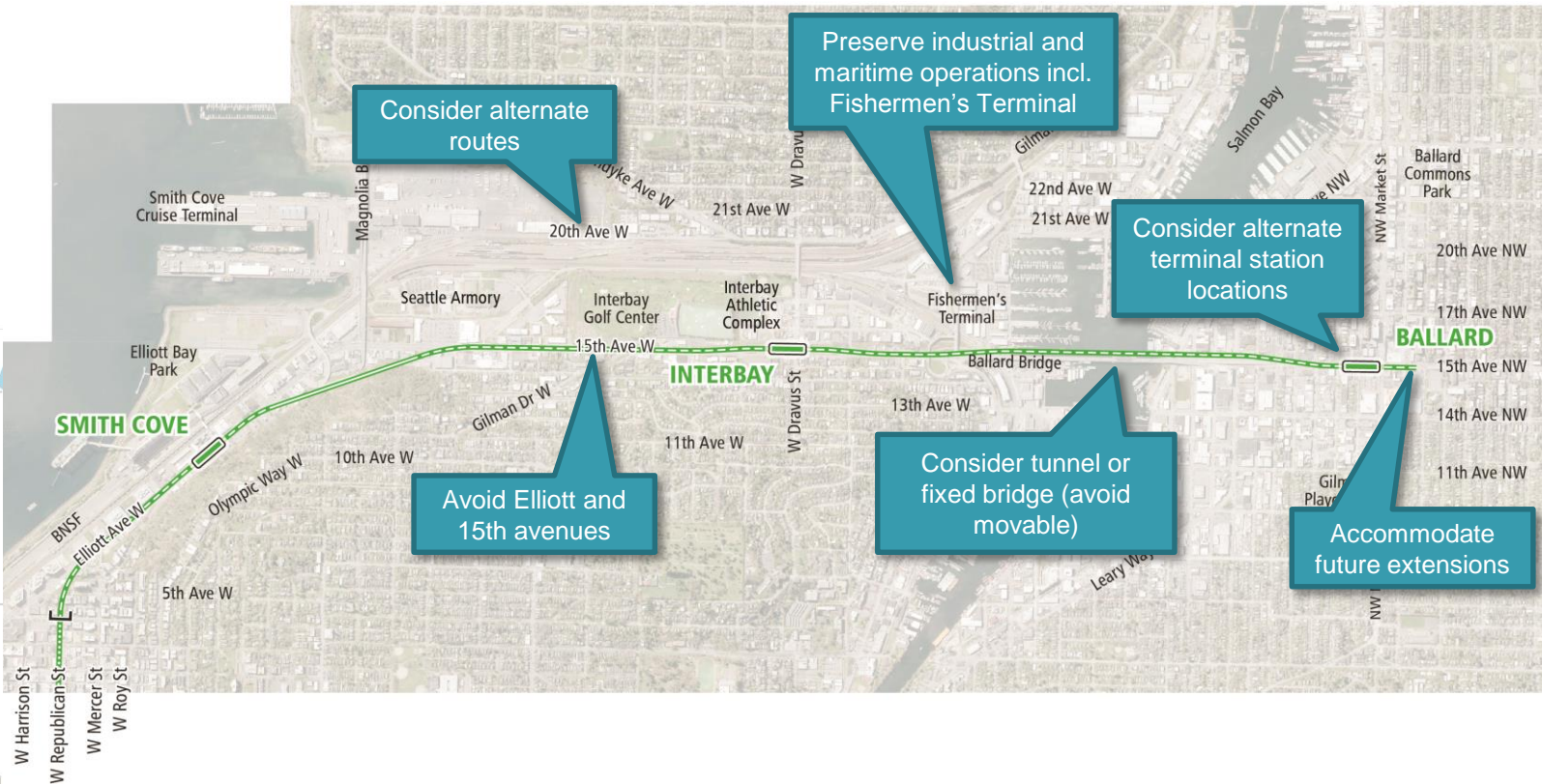
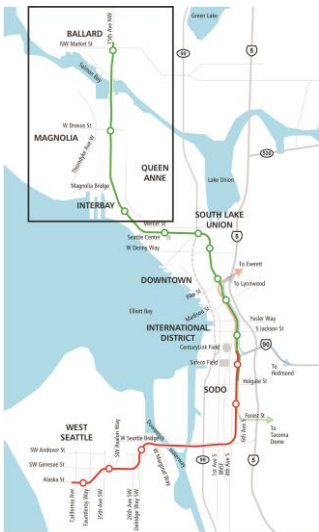
# Downtown — Neighborhood forums feedback

# Downtown summary

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





# Downtown – SAG recommendations

	Alternative		Carry forward?	Do not carry forward?	Notes/Comments
Alternatives with more potential	ST3 Representative Project				
	5th/Harrison		✓		
	6th/Boren/Roy		✓		Move Seattle Center station south
Alternatives with greater challenges	5th/Mercer			✓	Freight impacts on Mercer; some prefer Seattle Center station location
	5th/Roy/Consolidated SLU Station			✓	
	8th/6th/Republican (First Hill)		✓		Mix of opinions on carrying forward
Not practical suggestions	Use Downtown Seattle Transit Tunnel (DSTT)			✓	
	Design for potential extensions to north and/or east			✓	



 = early scoping comments

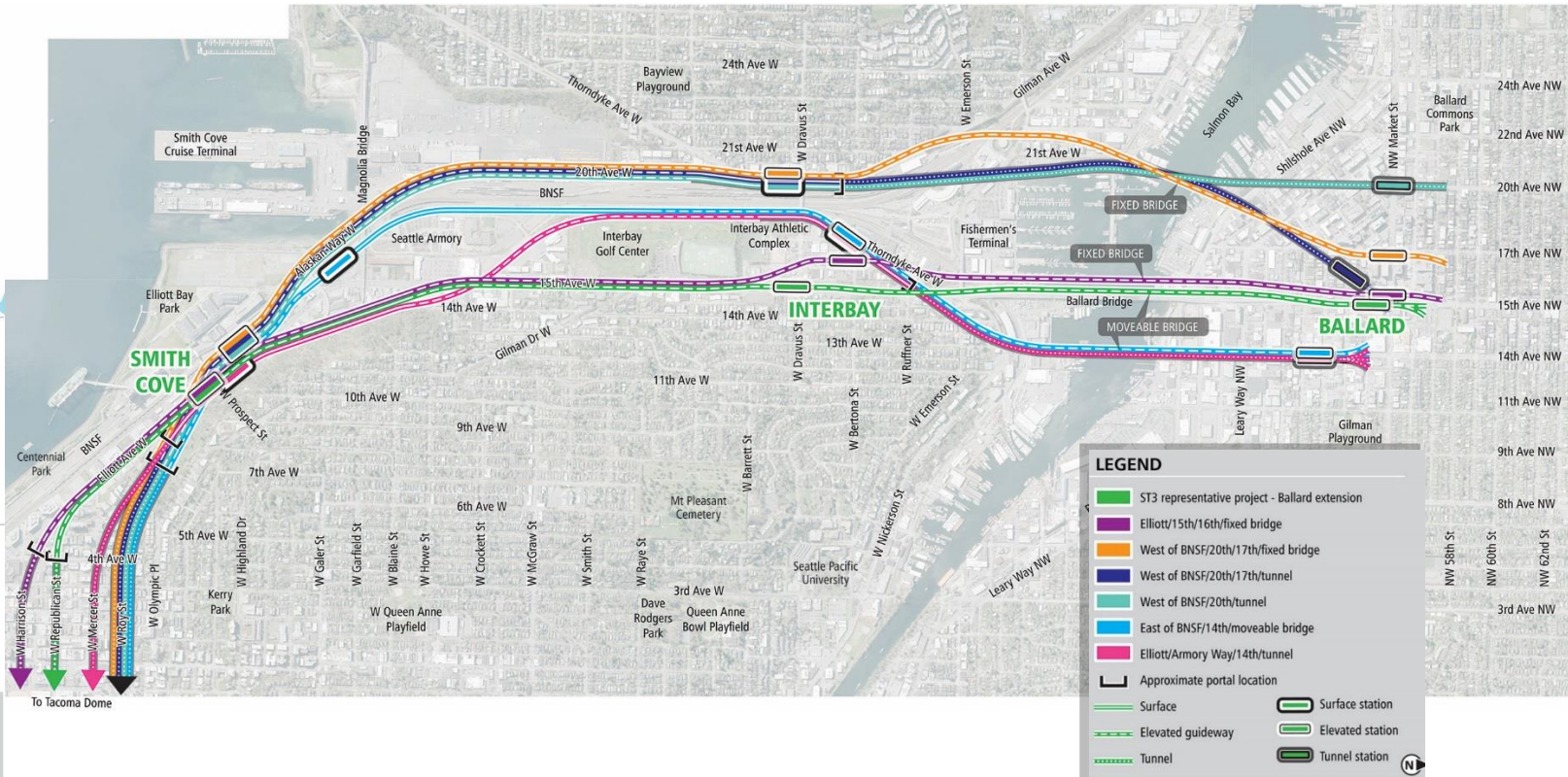
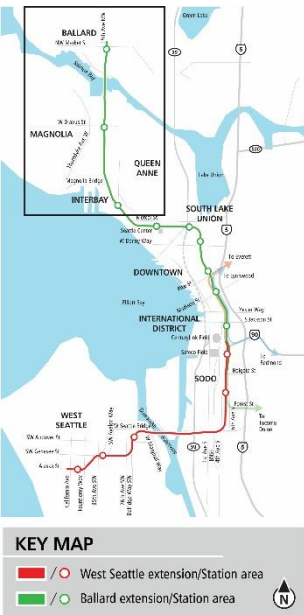
**KEY MAP**

-  /  West Seattle extension/Station area
-  /  Ballard extension/Station area



# Interbay/Ballard – Early Scoping feedback

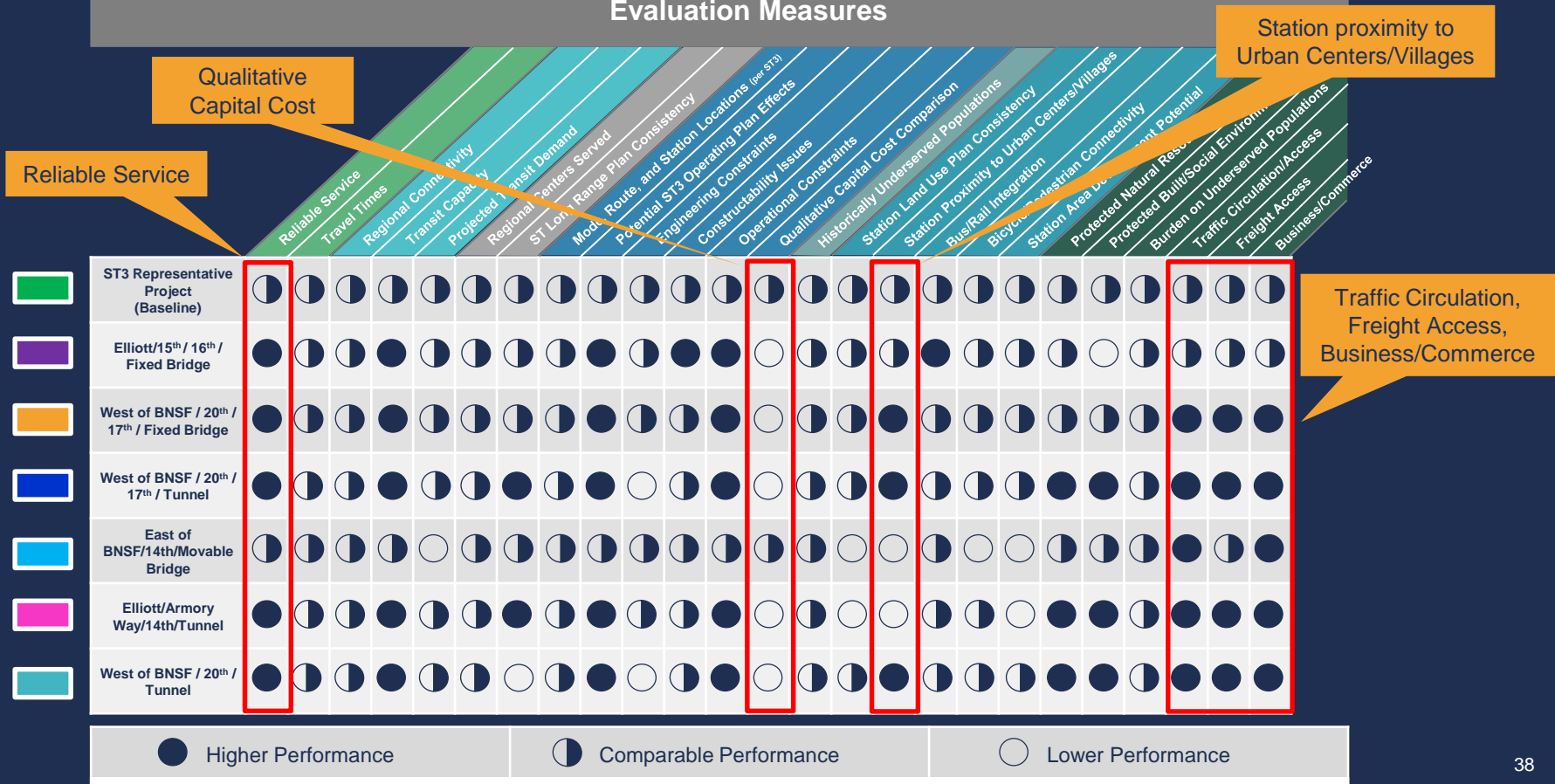




# Interbay / Ballard – Level 1 alternatives

# Interbay / Ballard evaluation

## Evaluation Measures

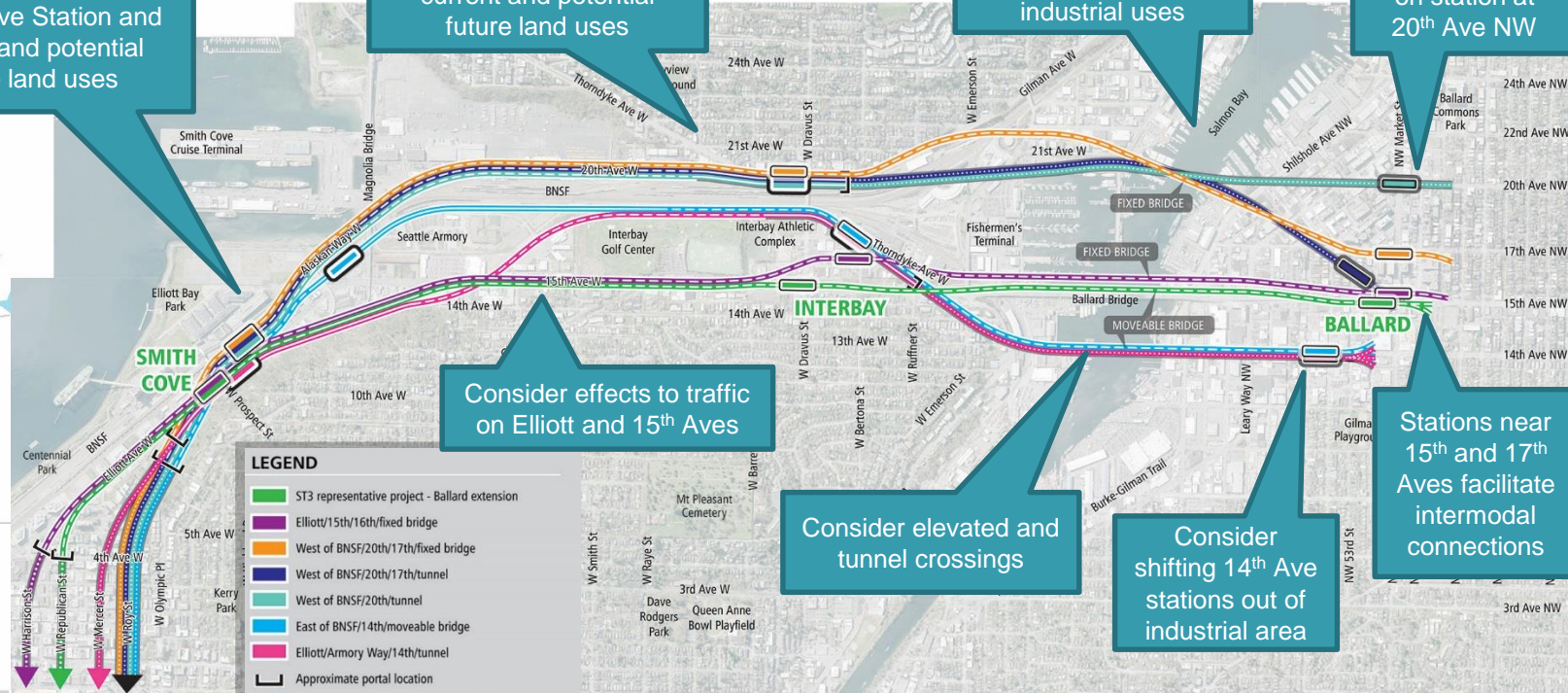


Consider access between Smith Cove Station and current and potential future land uses

Consider access between Interbay Station and current and potential future land uses

Consider effects to maritime and industrial uses

Mixed opinions on station at 20<sup>th</sup> Ave NW



Consider effects to traffic on Elliott and 15<sup>th</sup> Aves

Consider elevated and tunnel crossings





Consider shifting 14<sup>th</sup> Ave stations out of industrial area

Stations near 15<sup>th</sup> and 17<sup>th</sup> Aves facilitate intermodal connections

# Interbay / Ballard – Neighborhood forums feedback









# Interbay / Ballard summary

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



# Interbay / Ballard – SAG recommendations

	Alternative		Carry forward?	Do not carry forward?	Notes/Comments
Alternatives with more potential	ST3 Representative Project				
	Elliott/15 <sup>th</sup> /16 <sup>th</sup> /Fixed Bridge		✓		
	West of BNSF/20 <sup>th</sup> /17 <sup>th</sup> /Fixed Bridge		✓		
	East of BNSF/14 <sup>th</sup> /Movable Bridge		✓		
	West of BNSF/20 <sup>th</sup> /17 <sup>th</sup> Tunnel		✓		
	Elliott/Armory Way/14 <sup>th</sup> /Tunnel		✓		
Alternatives with greater challenges	West of BNSF/20 <sup>th</sup> /Tunnel		✓		Mix of opinions on carrying forward; agreement to carry forward
Not practical suggestions	Tunnel through Queen Anne/Interbay			✓	
	Extensions to 65 <sup>th</sup> , 85 <sup>th</sup> , Northgate			✓	
	Multi-modal Salmon Bay bridge			✓	Minority opinion to carry forward
	Eliminate or add stations			✓	

A photograph of a Sound Transit train at a station platform. The train is white with a blue wave-like stripe along the bottom. The number '139B' is visible on the side. The text 'SOUND TRANSIT' is on the front and side. The station platform has a metal railing in the foreground and a yellow tactile strip along the edge. A digital display board is visible above the platform. The text 'Next steps' is overlaid in the center in a large, white, italicized font.

# *Next steps*

# Community engagement and collaboration



Meeting dates subject to change.

*soundtransit.org/wsblink* 





***Intentionally blank***