

# Sound Transit West Seattle and Ballard Link Extensions Level 2 Working Session

Purpose: Familiarize Commissioners with alternatives under consideration in advance of September 13 full Commission meeting.

- Identify questions for ST
- Begin formulating recommendations

Near term Important Dates:

August 16 LUT

September 13 Full Commission

September 20 LUT

September 27 Full Commission

October 5 Seattle Elected Leadership Group

# Community engagement and collaboration



Community Updates



Neighborhood Forums



Stakeholder Advisory Group



Elected Leadership Group



Sound Transit Board



Meeting dates subject to change.

Graphic: Sound Transit

# Proposed Alternatives/Stations for Detailed SPC Review

## Top Priority

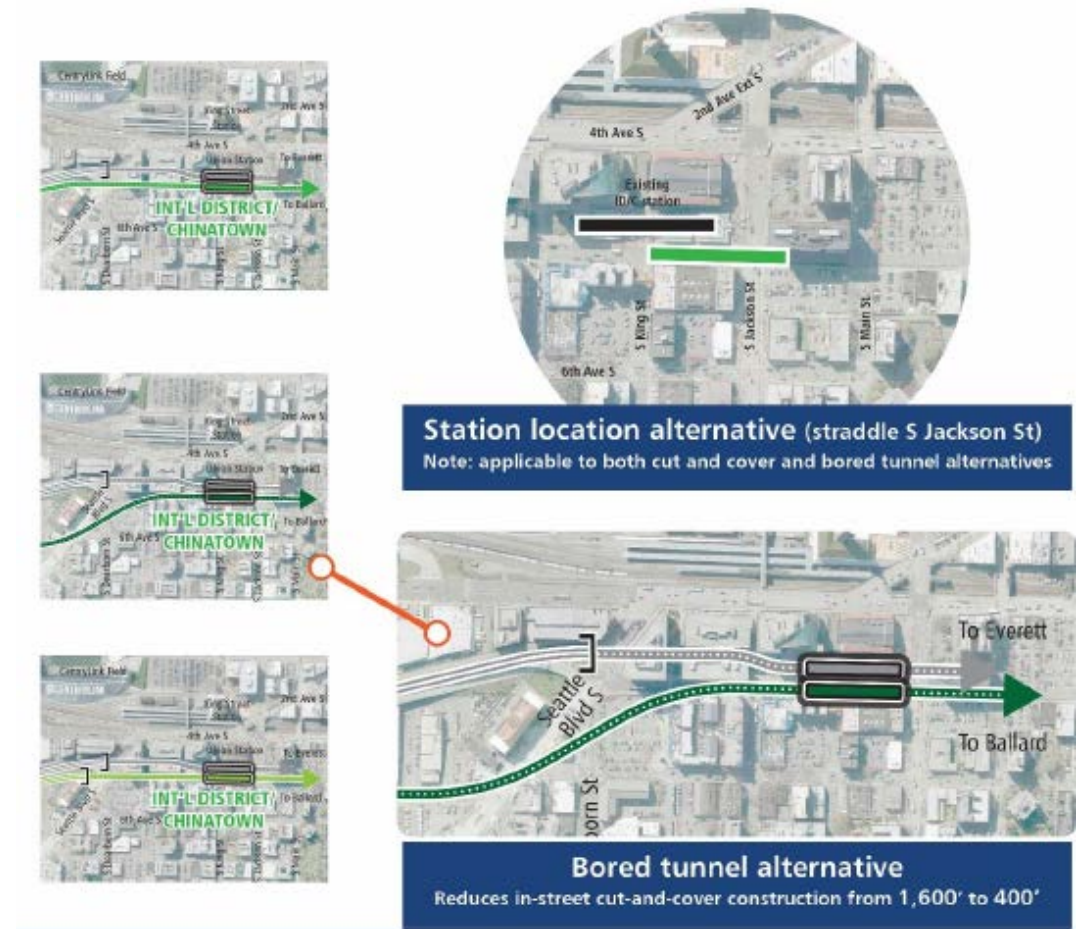
- Chinatown/International District
- SODO/Stadium
- Alaska Junction/Avalon/Delridge
- Interbay/Ballard

## Next Priority (if time allows)

- Seattle Center/Denny/South Lake Union
- New Downtown Tunnel Stations

# Chinatown/International District Station

- ST3 Representative Project: cut-and-cover station on 5<sup>th</sup> Avenue adjacent to Union Station
- Would disrupt C/ID businesses and traffic
- Additional feedback from community and stakeholders: consider 4th Avenue location for Chinatown-ID station

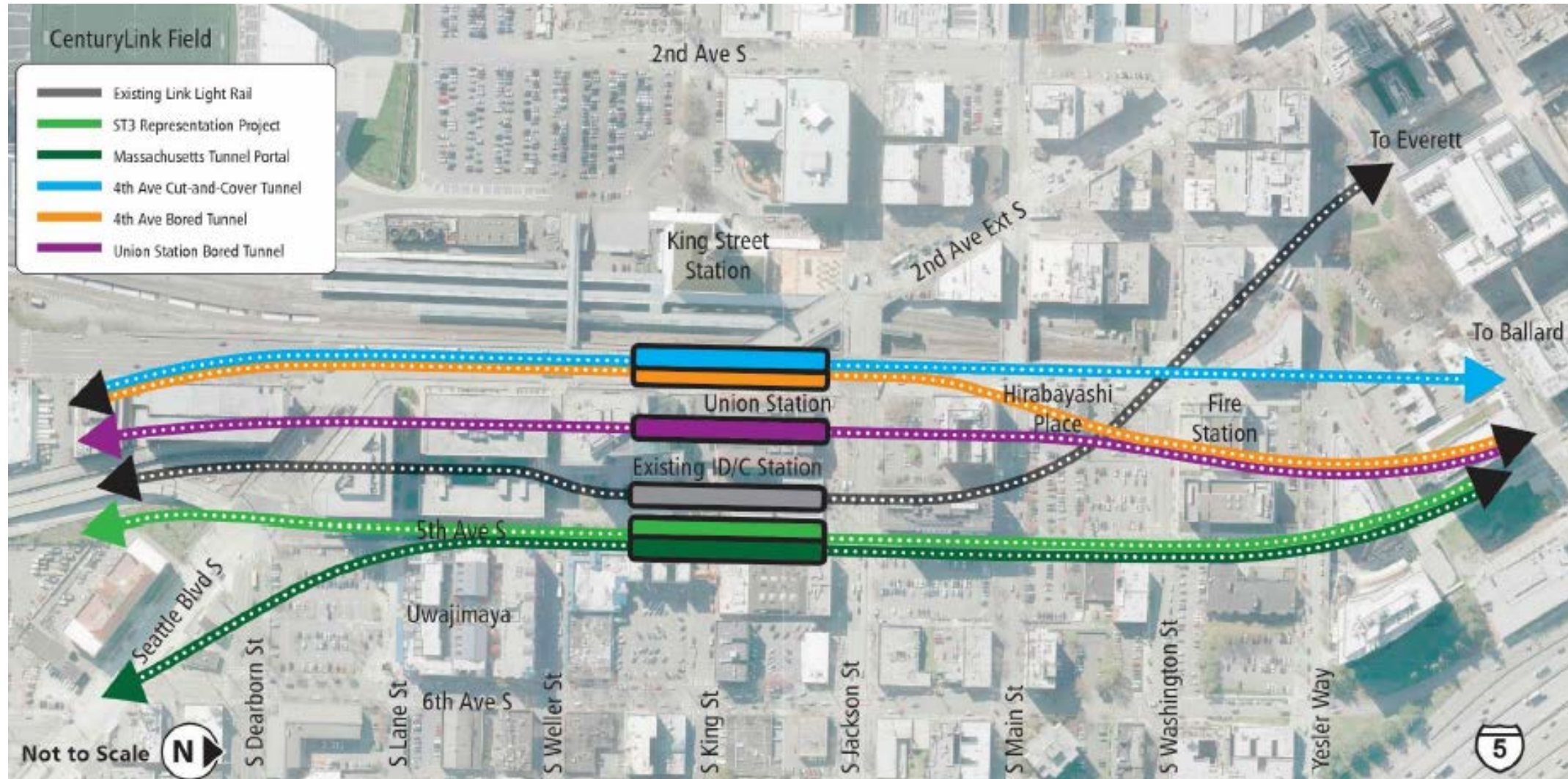


Graphic: Sound Transit

# C/ID Station - Community Concerns



# New C/ID Level 1 Alternatives

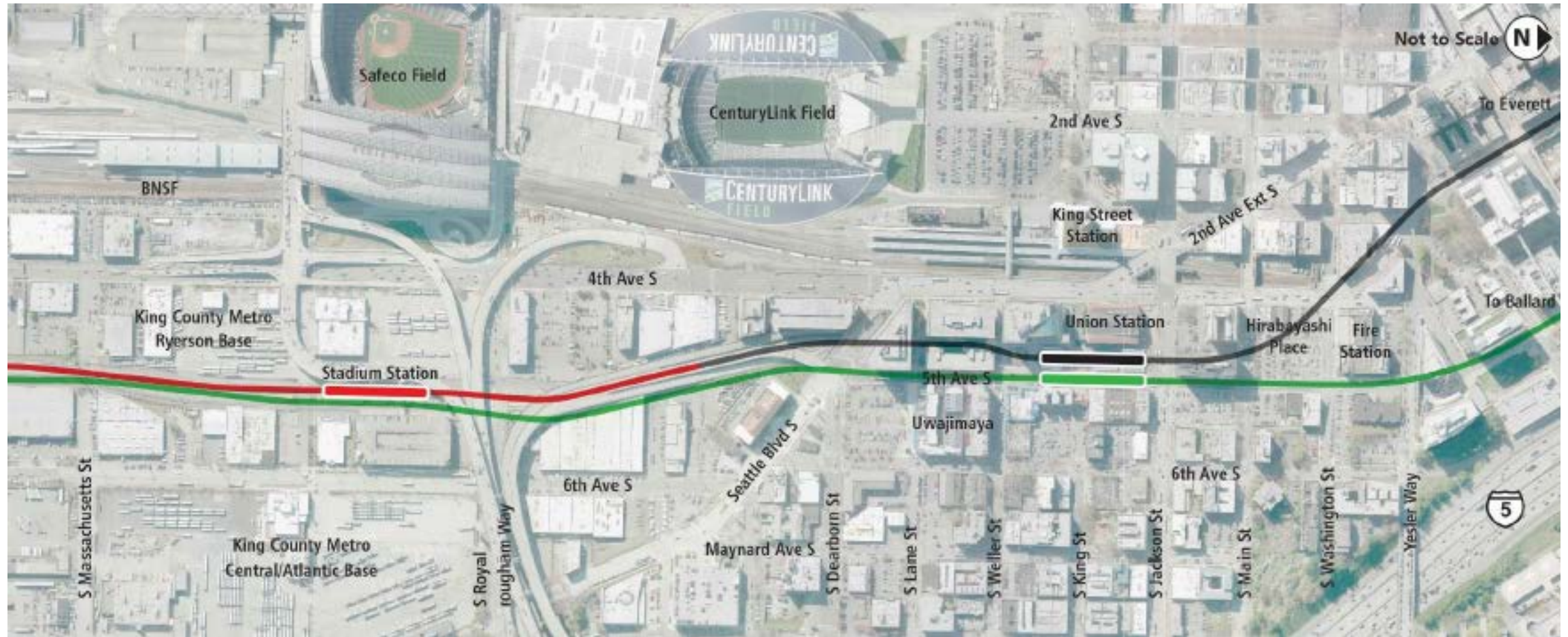


Graphic: Sound Transit

# C/ID Alignment and Station Alternatives

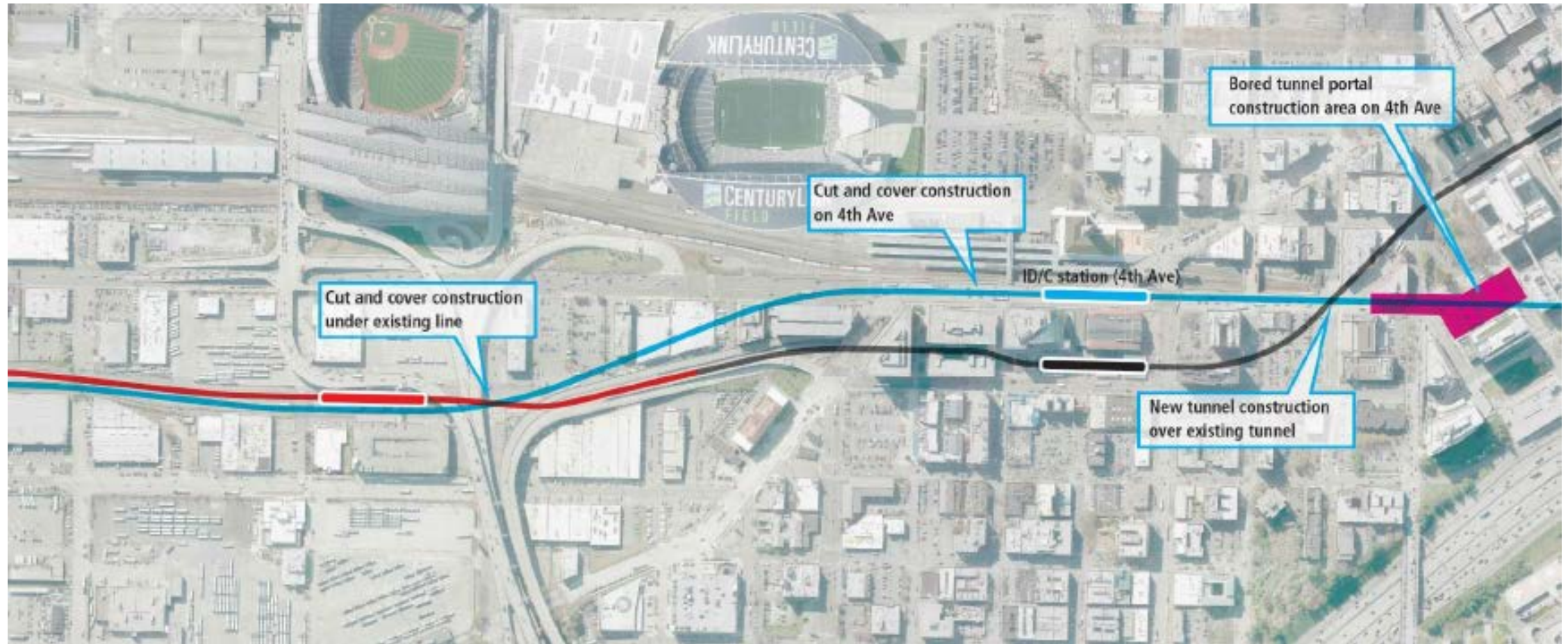
- Alignment options on 5<sup>th</sup> Avenue or 4<sup>th</sup> Avenue (cut-and cover or bored) or under Union Station (bored)
- 5<sup>th</sup> Avenue cut-and-cover option would disrupt local businesses and traffic; bored option would disrupt smaller area only for a cut-and-cover station
- 4<sup>th</sup> Avenue option would require rebuilding existing viaduct, would disrupt high volume of traffic; construction period of 4.5-6 years
- Opportunity to utilize/activate Union Station; create intermodal connection to King Street Station

# C/ID Station at 5th Ave S





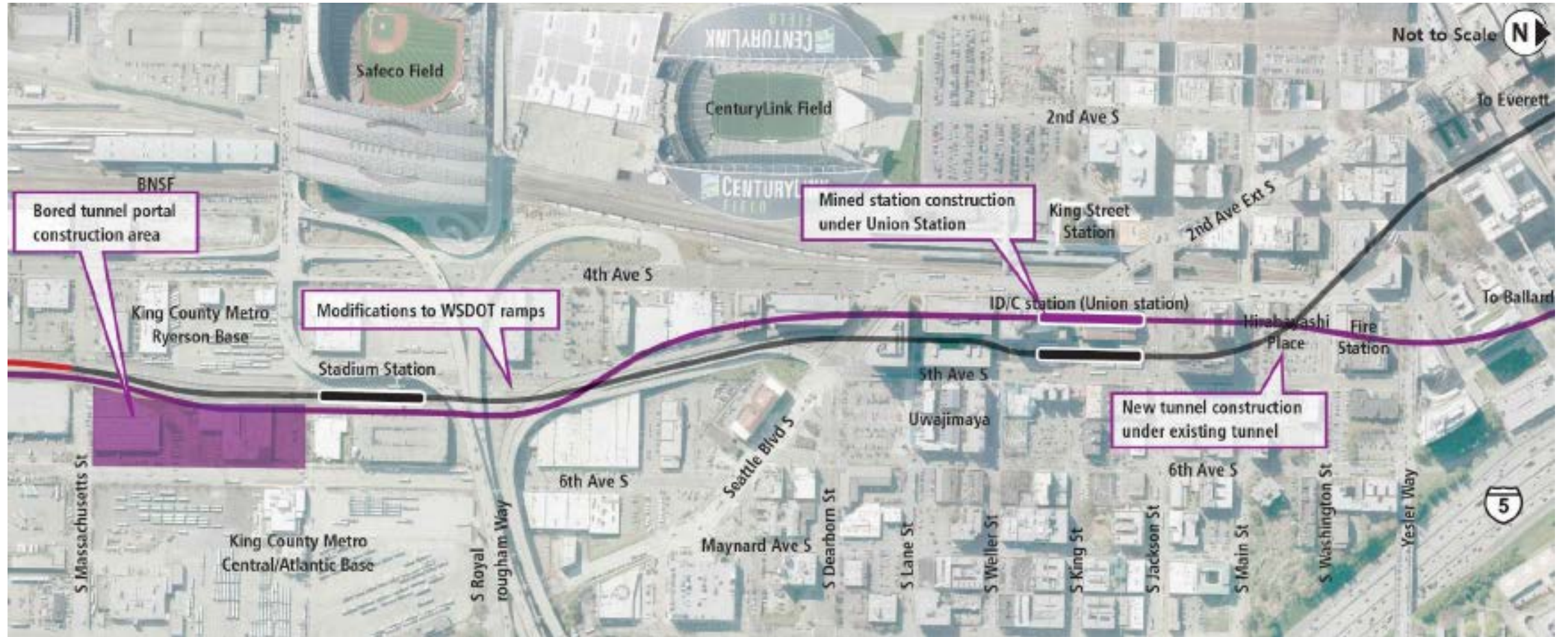
# C/ID Station at 4<sup>th</sup> Ave S: cut-and-cover



# C/ID Station at 4<sup>th</sup> Ave S: bored tunnel









# C/ID Station under Union Station: bored tunnel



# New C/ID Level 1 Alternatives

Tunnel / Station Type	5th Ave	4th Ave	Union Station
Cut-and-cover Platform depth:	✓ (40-50')	✓ (30-40')	✗
Bored / mined Platform depth:	✓ (100-120')	✓ (150-200')	✓ (150-200')

# C/ID Alternatives – SAG & ELG Recommendations

	Alternative		Carry forward?	Do not carry forward?
Alternatives with more potential	5 <sup>th</sup> Ave Cut-and-Cover Tunnel and Station (ST3/Baseline) 		✓	
	5 <sup>th</sup> Ave Bored Tunnel / Cut-and-Cover Station 		✓	
Alternatives with greater challenges	5 <sup>th</sup> Ave Bored Tunnel / Mined Station 		✓	
	4 <sup>th</sup> Ave Cut-and-Cover Tunnel and Station 		✓	
	4 <sup>th</sup> Ave Bored Tunnel / Mined Station 		✓	
Not practical concept	Union Station Bored Tunnel / Mined Station 			✓

# C/ID Alternatives – SAG & ELG Recommendations

- Carry forward multiple alternatives until more is known about construction impacts and duration
- Carry forward both 5<sup>th</sup> Ave Bored Tunnel/Mined Station and 4<sup>th</sup> Ave Bored Tunnel/Mined Station alternatives even though not full consensus
- Clarify 4<sup>th</sup> Avenue viaduct replacement need and funding availability from City of Seattle
- Consider and provide information on lands that will be used for staging

# SODO Segment - Level 2 Alternatives



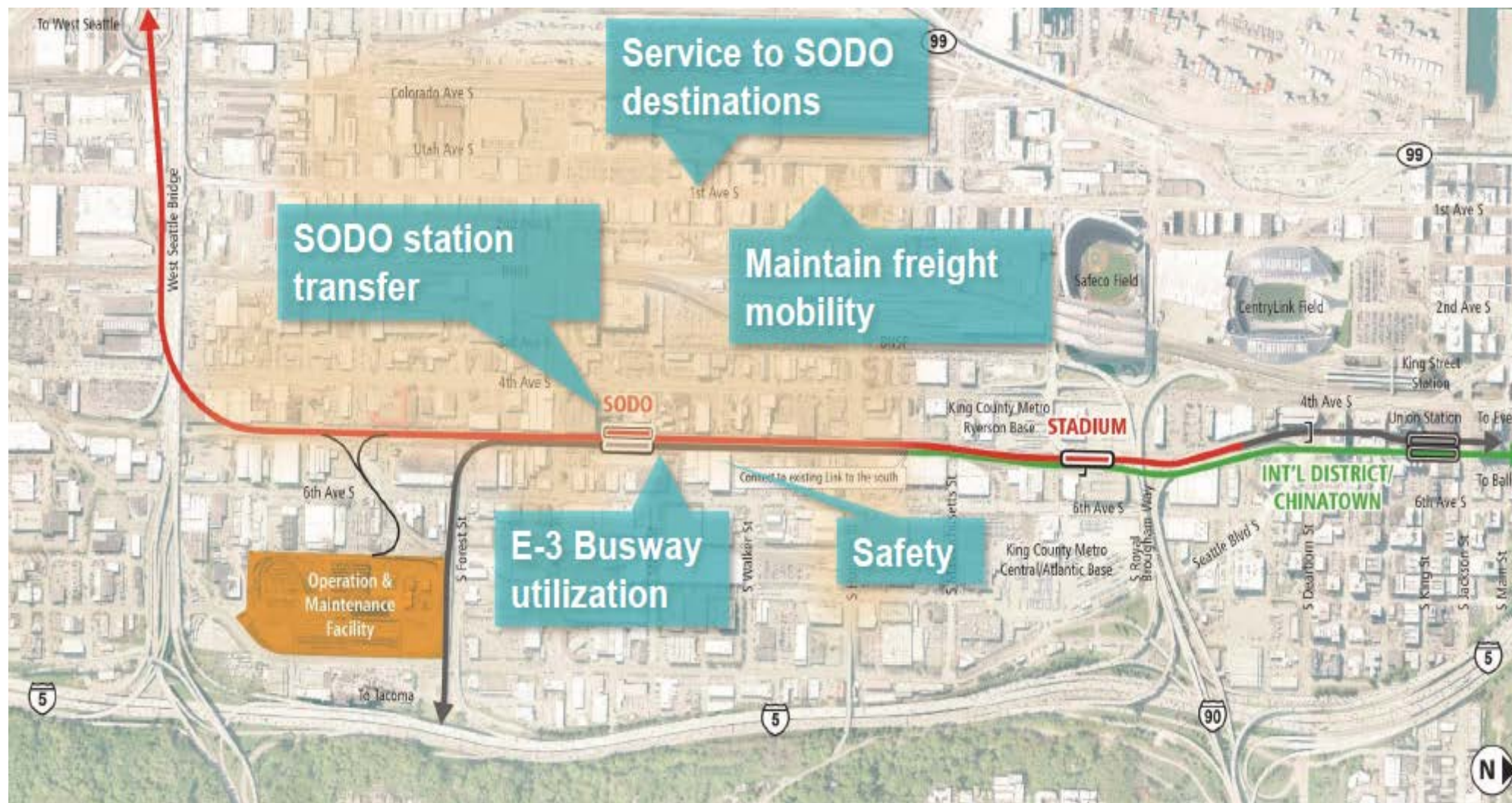
Graphic: Sound Transit

# SODO Segment - Level 2 Alternatives

- ST<sub>3</sub> Representative Project
  - Elevated alignment with new SODO and Stadium stations
- Massachusetts Tunnel Portal
  - At-grade SODO Station, transition into bored tunnel, no Stadium station
- Surface E-3
  - At-grade alignment with new SODO and Stadium stations
- Feedback from community and stakeholders
  - Explore alignments further west of ST<sub>3</sub> Representative Project



# SODO Segment - Community Concerns



Graphic: Sound Transit

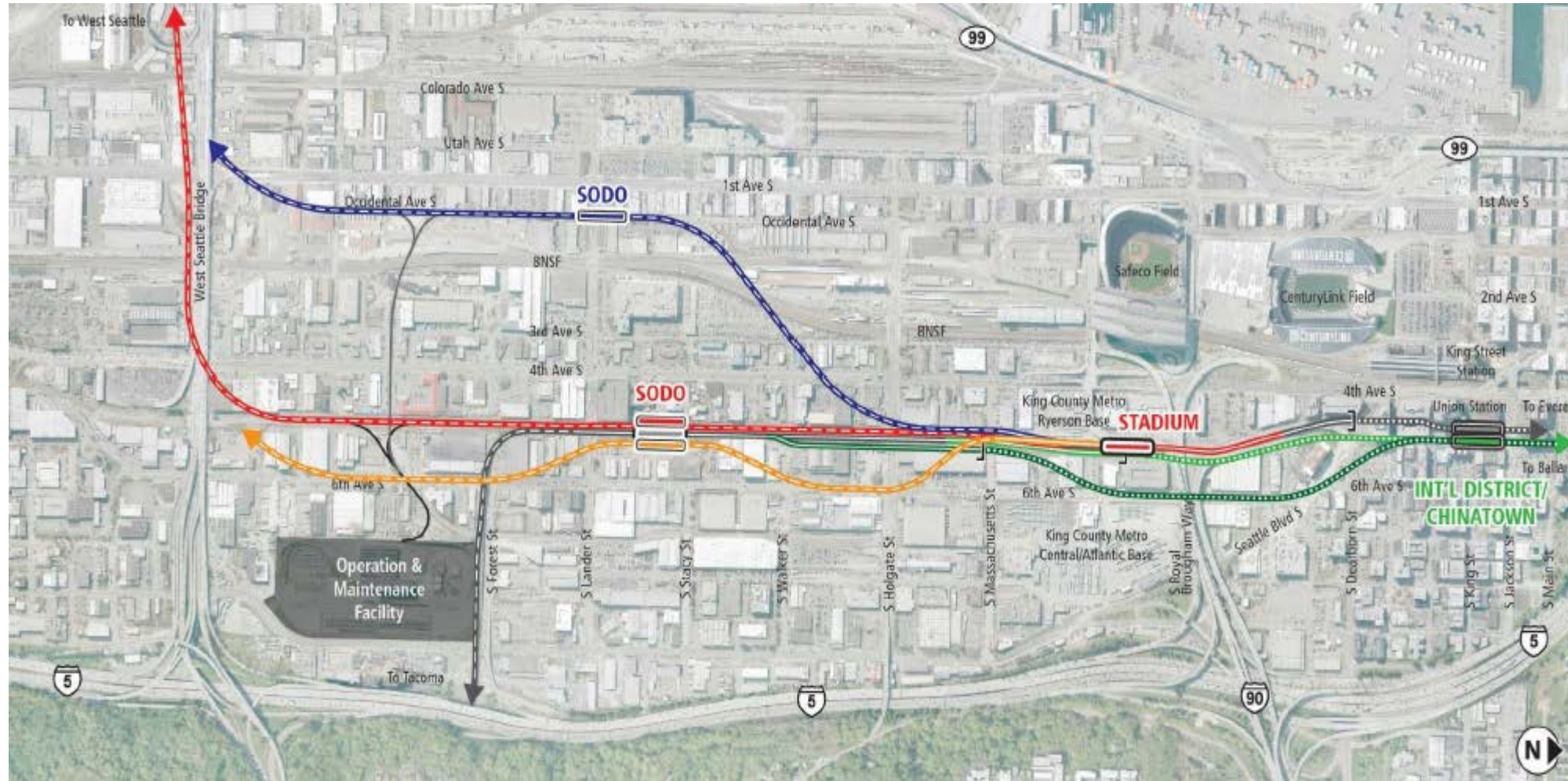
# SODO Station

- Interim transfer point from 2030-2035 and permanent transfer to southbound Central Link
- Will require a transfer strategy for various light rail and high volume bus lines that converge here
- Buses in the E-3 corridor are connecting between employment areas and affordable residential areas to the south; this trend is increasing
- Need to plan for multi-modal connections from the station to SODO employment center
- Bike trail adjacent to E-3 corridor: retain or relocate
- Pedestrian and non-motorized connections: at-grade or overpasses

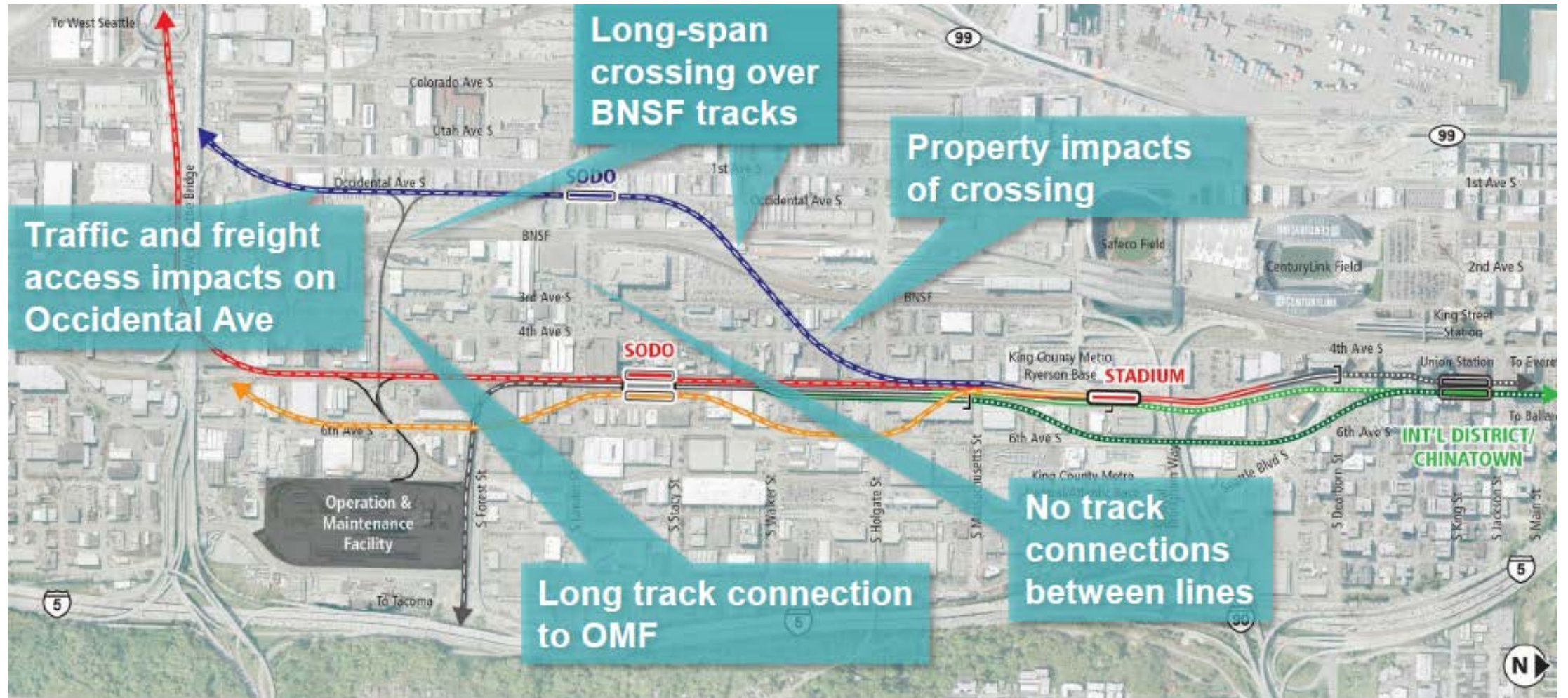
# Stadium Station

- Station could be located near the existing station – at grade – or at a 1<sup>st</sup> Ave location
- Connect to the existing station as well as possible with logical transfers
- Provide connectivity to the stadiums

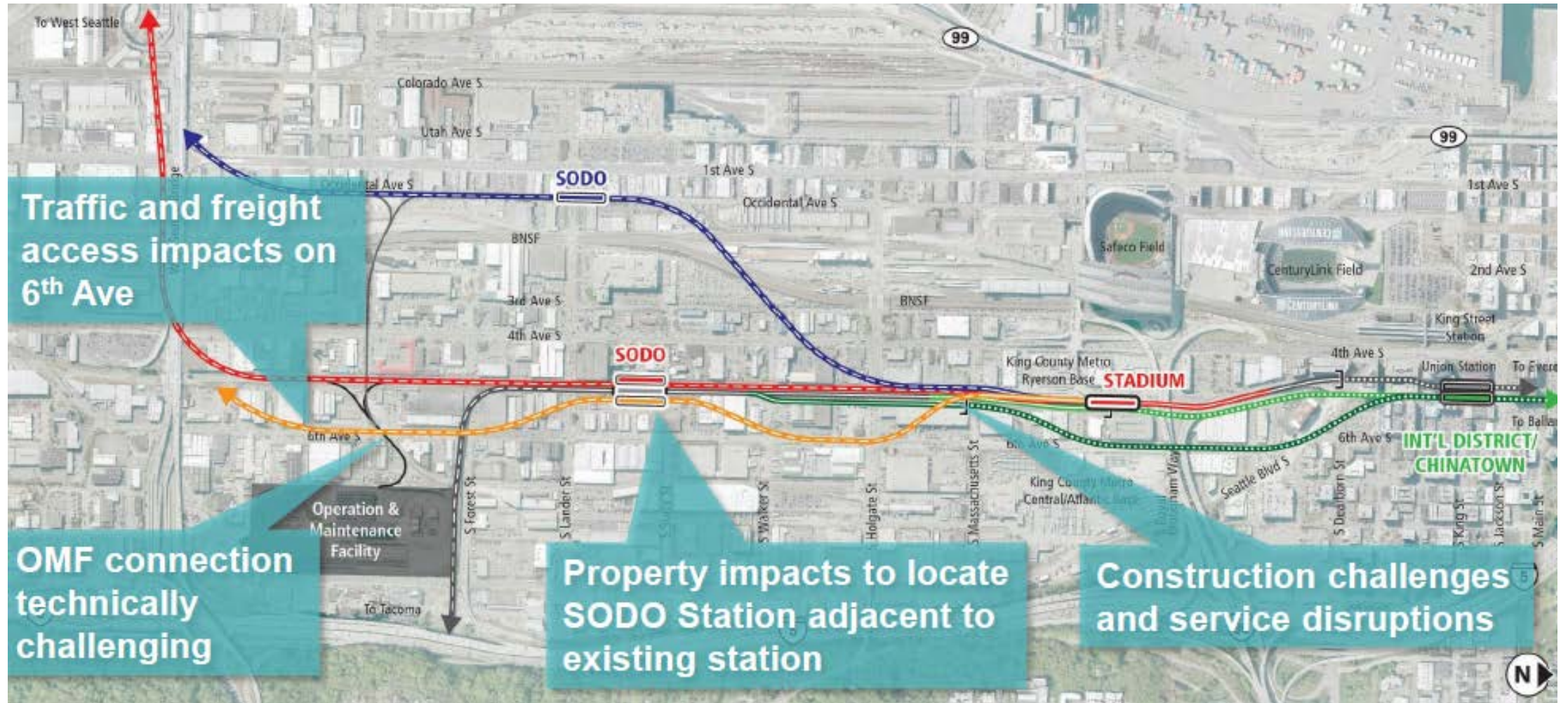
# New SODO Alternatives






# Occidental Ave. Alternative



# 6th Ave. Alternative



# SODO Alternatives – SAG & ELG Recommendations

	Alternative		Carry forward?	Do not carry forward?
Alternatives with more potential	ST3 Representative Project		✓	
	Surface E-3		✓	
	Massachusetts Tunnel Portal		✓	
Alternatives with greater challenges	Occidental Ave		✓	
	6th Ave			✓
Not practical concepts	“Track interlining”			✓
	“Extended Ballard line”			✓

# SODO Alternatives – SAG & ELG Recommendations

- Consider pressure on industrial areas and freight mobility with a station located on Occidental
- Continue analyzing an alternative to the west of existing line
- Focus station planning on improving bus and other access in SODO
- Continue analysis of the E-3 bus volumes and impacts to Seattle City Light transmission lines
- Look for opportunities to move the interim transfer for West Seattle to the Chinatown/International District



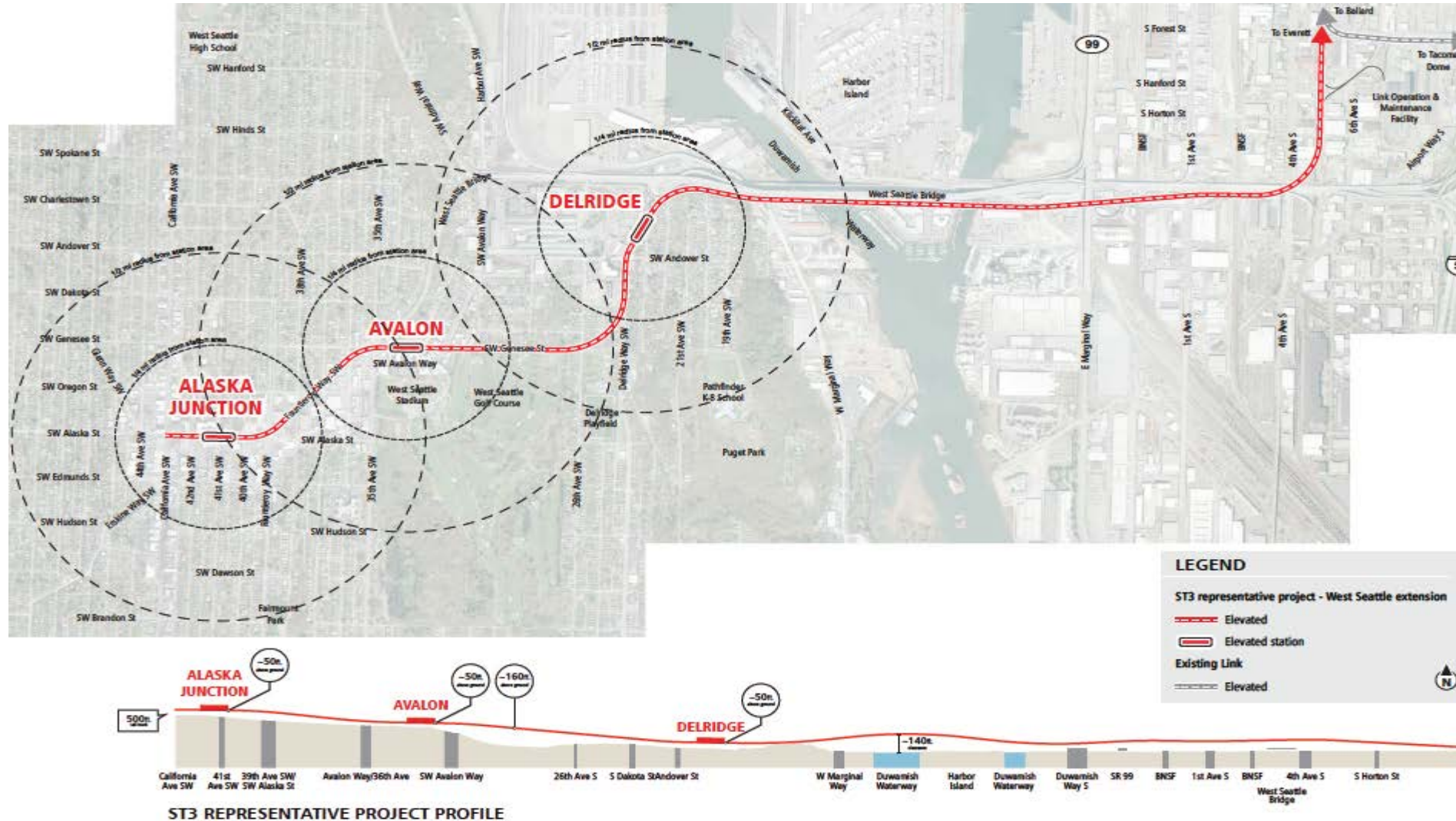
# West Seattle/Duwamish – Level 2 alternatives

- ST3 Representative Project (red)
- Pigeon Ridge/West Seattle Tunnel (purple)
- Oregon Street/Alaska Junction/Elevated (gold)
- Oregon Street/Alaska Junction/Tunnel (new) (brown)
- Golf Course/Alaska Junction/Tunnel (modified) (blue)

# West Seattle/Duwamish –Level 2 alternatives



# West Seattle/Duwamish –Level 2 alternatives



# West Seattle to SODO/Duwamish Crossing

- Alternatives adjacent to West Seattle Bridge
  - Impacts to Port of Seattle operations
  - Impacts to environmentally sensitive areas and residential areas at tip of Pigeon Point
- “Pigeon Ridge” alternative
  - Crosses Duwamish further south
  - Tunnels under Pigeon Point/Puget Ridge, 2<sup>nd</sup> tunnel to Avalon/Alaska Junction stations
  - Works better with terrain/grade change

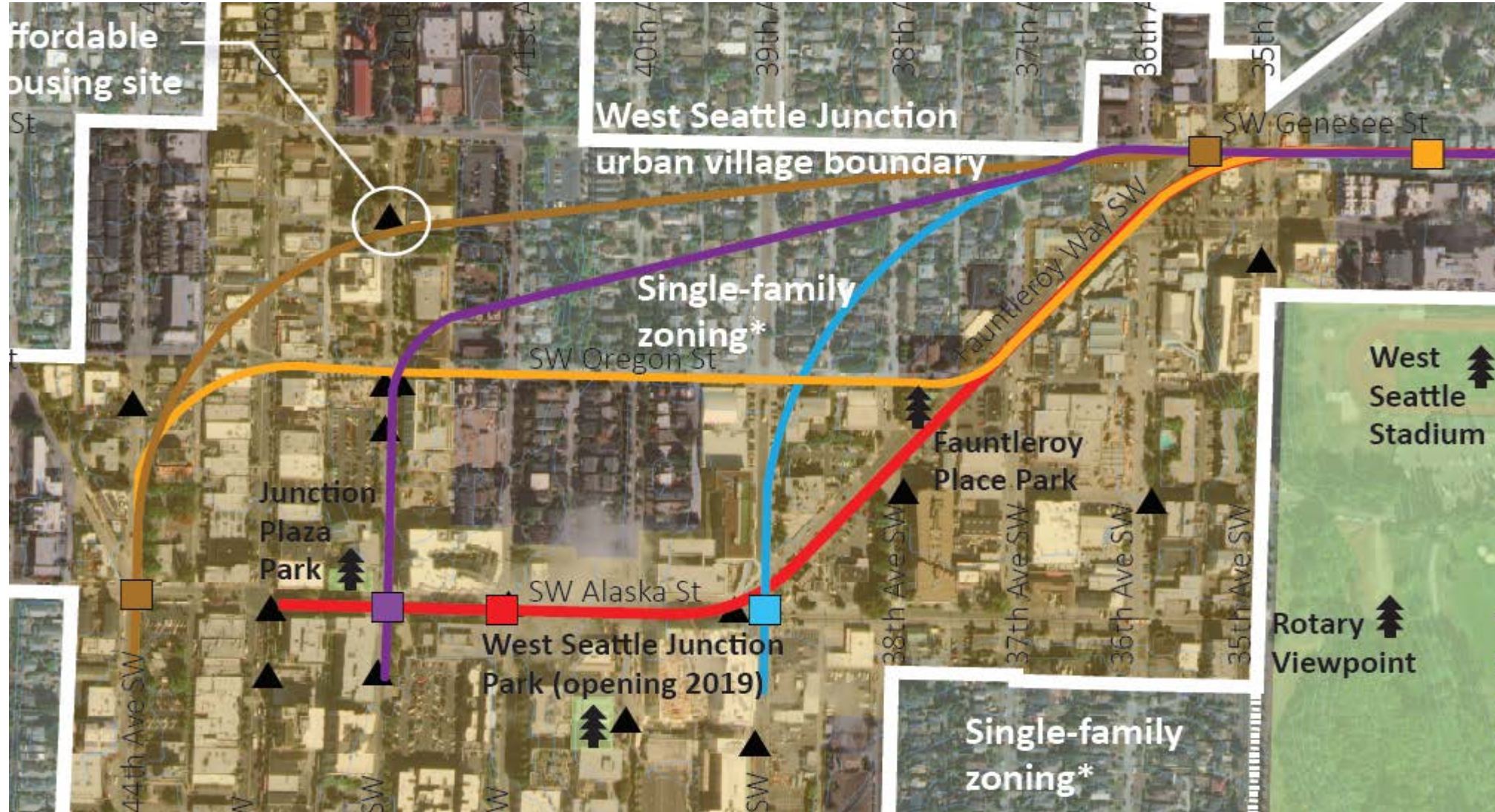
# Delridge Station

- 4 alternative station locations in this area:
  - On Delridge, between West Seattle Bridge and Andover (Rep Alignment)
  - On Delridge, between Andover and Genesee (gold, brown)
  - To the west of Delridge – would impact single-family homes (blue)
  - At Delridge and Genesee (purple)
- Purple line has closest proximity to Delridge Community Center/Playfield and Youngstown Cultural Arts Center
- Potential for TOD west of Delridge and north of Genesee; would increase housing in the walkshed; could replace naturally-occurring affordable homes with permanently affordable housing
- Connectivity to existing and future bus lines; Rapid Ride H line will be along Delridge Way; connections to South Seattle College

# Avalon Station

- Elevated or tunnel stations in various locations along Fauntleroy
- Relatively low densities in this area – however..
- Area is rapidly developing, especially with multi-family; neighborhood needs more affordable housing
- Communities here are very eager for transit
- Tunneled stations offer east-west connections across Fauntleroy
- Good transit connections to buses on Delridge or California

# Alaska Junction Station



# Alaska Junction Station

## Elevated alignments

- ST3 Representative Project (red) – station at 41<sup>st</sup> and Alaska
- Oregon Street/Alaska Junction/Elevated (gold) – station at 44<sup>th</sup> and Alaska

## Tunnel alignments

- Pigeon Ridge/West Seattle Tunnel (purple) – station at 42<sup>nd</sup> and Alaska
- Oregon Street/Alaska Junction/Tunnel (brown) – station at 44<sup>th</sup> and Alaska
- Golf Course/Alaska Junction/Tunnel (blue) – station at Fauntleroy and Alaska



# Alaska Junction Station

Tunnel alignments/stations have the following benefits:

- Less impact to surrounding neighborhood and commercial district
- Less disruptive to traffic
- Need to acquire less property
- Avoids large grade change between Fauntleroy and California

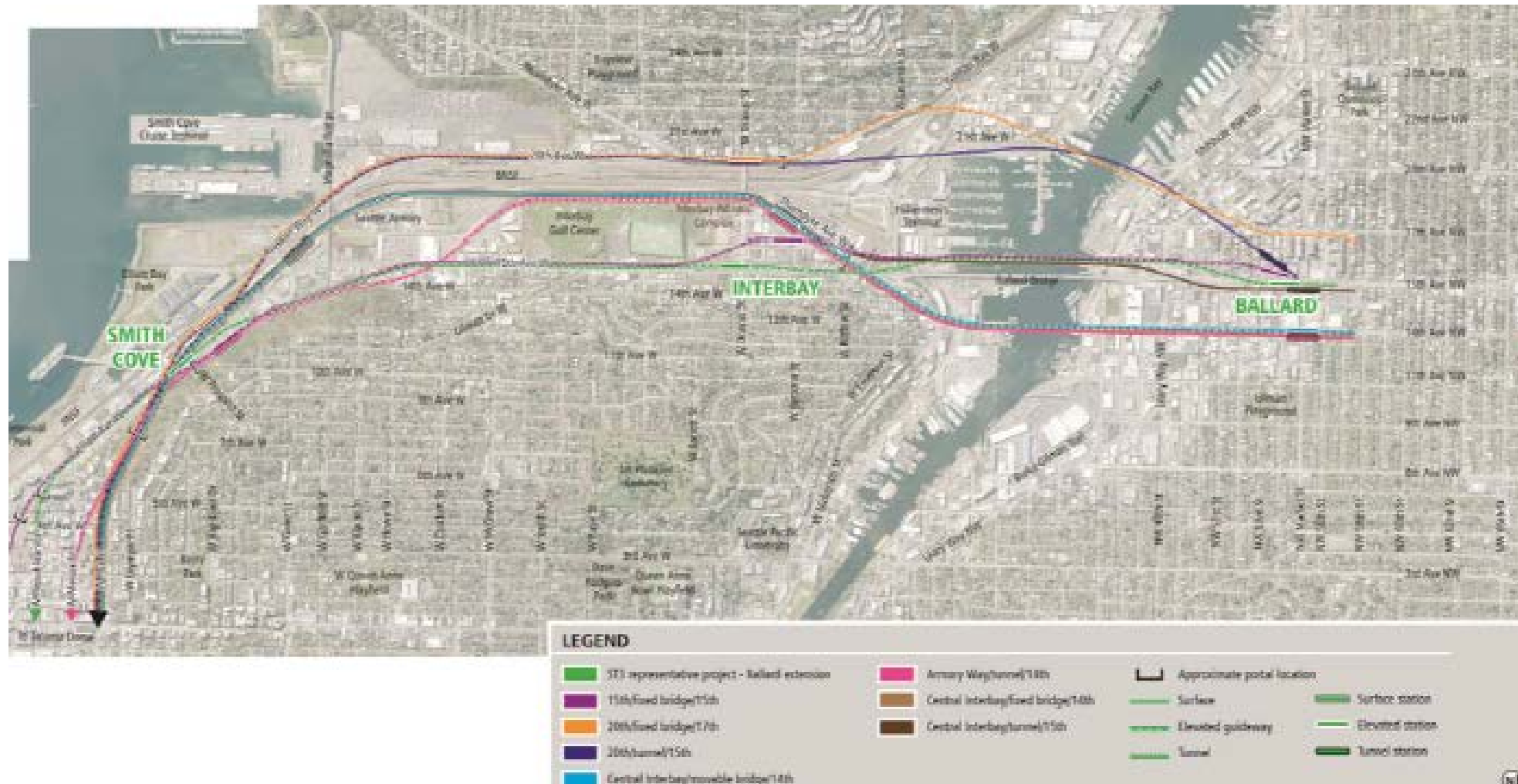
Station location considerations include:

- Impacts to California Ave SW business district/existing and planned residential density
- Proximity to California supports N/S bus corridor
- ADA accessibility to California business district
- Pedestrian connectivity – station, business district, residential
- Consideration of future light rail expansion

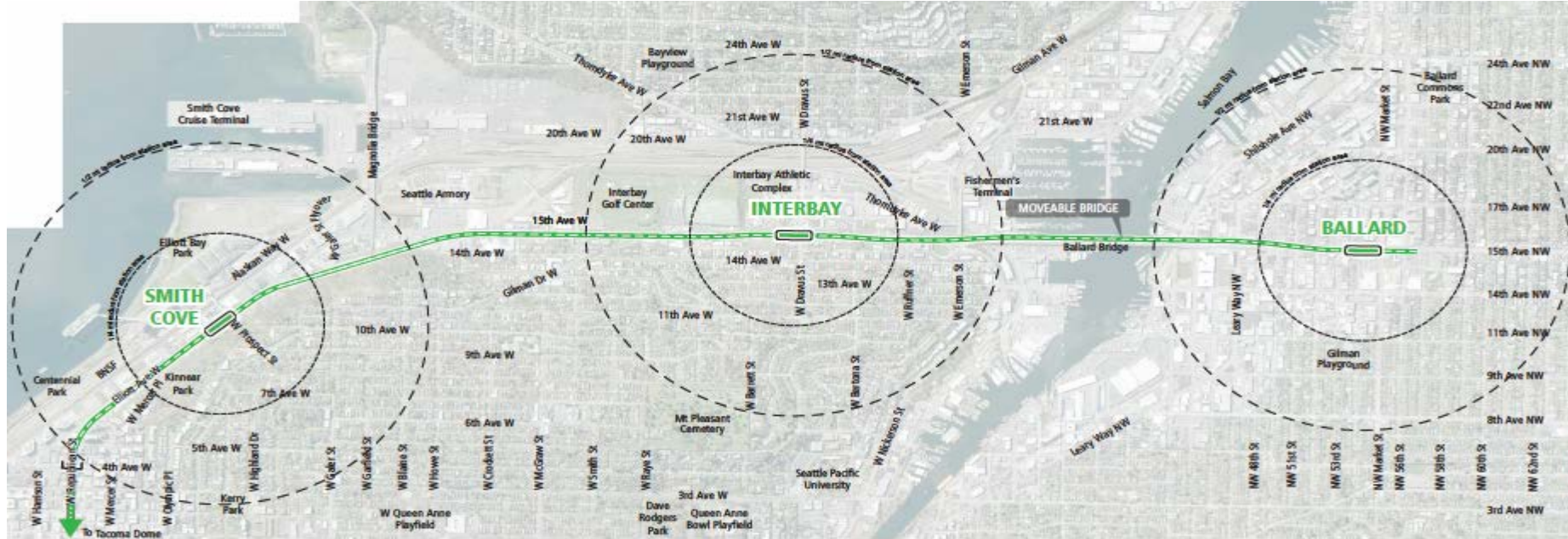
# Interbay/Ballard – Level 2 alternatives

- ST3 Representative Project (green)
- 15th/Fixed Bridge/15<sup>th</sup> (violet)
- 20th/Fixed Bridge/17<sup>th</sup> (gold)
- 20th/Tunnel/15<sup>th</sup> (purple)
- Armory Way/Tunnel/14<sup>th</sup> (pink)
- Central Interbay/14<sup>th</sup>
  - Movable (blue)
  - Fixed (new) (tan)
- Central Interbay/Tunnel/15<sup>th</sup> (new) (brown)

# Interbay/Ballard – Level 2 alternatives



# Interbay/Ballard – Level 2 alternatives



ST3 REPRESENTATIVE PROJECT PROFILE

# Smith Cove Station

- Station location options include adjacent to future Expedia campus or north of W. Galer St. flyover to serve Terminal 91 (cruise ships)
- Transportation impacts of locating alignment in 15<sup>th</sup> Ave right of way could be significant
- Future of Magnolia Bridge could be a determining factor
- Non-motorized connections in this area need to be improved to connect station, Expedia, and community assets (Smith Cove Park)
- Opportunity for future residential and employment density further north, including possible TOD at Armory site

# Smith Cove to Salmon Bay

- Potential alignment alternatives include either side of the existing railroad right of way
- At-grade alignment could be more cost-effective than elevated
- Possible dual use – transit and non-motorized (bike, pedestrian) corridor

# Interbay Station



# Interbay Station

- Station location alternatives include 15<sup>th</sup> Ave (representative project), 16<sup>th</sup> Ave, and either side of the BNSF right-of-way
- Station location on Dravus St. provides access for all modes
- Recent mixed-use development in “Dravus triangle”; potential for more
- Interbay station west of BNSF could warrant new urban village



# Salmon Bay Crossing

- Alternatives include:
  - Movable bridge at 15<sup>th</sup> and 14<sup>th</sup>
  - High-level fixed bridge at 17<sup>th</sup>, 15<sup>th</sup>, and 14<sup>th</sup>
  - Tunnel at 15<sup>th</sup> and 14<sup>th</sup>
- Movable bridge is least reliable – system disruptions
- Ballard Bridge will need replacement at some point; does this merit consideration of building new transit bridge in conjunction with bridge replacement? would consolidate construction disruptions and maximize investments
- Multi-modal bridge could accommodate transit and non-motorized

# Ballard Station



# Ballard Station

- 15<sup>th</sup> and Market – good location for multi-modal connections and to accommodate future system expansion
- TOD potential south of 15<sup>th</sup> and Market – currently auto-oriented
- Fixed bridge could have visual impacts to Ballard urban fabric
- Elevated guideway at 17<sup>th</sup> could have significant impacts on historic Old Ballard
- 14<sup>th</sup> station location is far from neighborhood core, adjacent to industrial land, puts pressure to expand urban center into BINMIC

# Downtown – Level 2 alternatives

- ST3 Representative Project (green)
- 5th/Harrison (blue)
- 6th/Boren/Roy (violet)
- 5th/Terry/Roy/Mercer (new) (brown)
  - Shifted Denny Station to Terry
  - Shifted alignment and SLU Station to avoid sewer and traffic conflicts on Mercer
  - Shifted to more central Seattle Center station location on Mercer
  - Shifted north tunnel portal off park property

# Downtown – Level 2 alternatives



# Denny Station

- Serves Cascade residential neighborhood, including community center and affordable/supportive housing
- Also serves lower South Lake Union area to the west
- Significant grade change in this area would affect siting and design of the station

# South Lake Union Station

- Three station options: underground at Harrison, Republican, or Roy
- Zoning around Harrison would likely generate higher ridership
- Provide east/west connectivity across SR 99, especially at Roy and other streets that will not be connected
- Potential future east-west bus service along Harrison

# Seattle Center Station

- Station options: underground at Harrison, Republican, Roy, or Mercer
- Harrison Street option is too far west given tunnel depth under redeveloped arena
- Consider accessibility from both Uptown neighborhood and Seattle Center campus
- Need for many multi-modal connections (Seattle Center events)



# Midtown Station

- Two station location options: near Madison under 5<sup>th</sup> or 6<sup>th</sup> Avenue
- 5<sup>th</sup> Avenue location is closer to the Madison BRT stop
- First Hill alternative was eliminated from consideration; dense residential population and employment center (regional health care facilities)

# Westlake Station

- Two station location options: under 5<sup>th</sup> or 6<sup>th</sup> Avenue
- 5<sup>th</sup> Avenue location would provide better transit connections
  - Existing Westlake Station
  - 3<sup>rd</sup> Avenue transit corridor
  - Buses on 4<sup>th</sup> and 5<sup>th</sup> Avenues
  - SLU streetcar station at McGraw Square