

West Seattle Link Extension

*Seattle Design
Commission Briefing*

*Package 2:
SODO Guideway,
Pigeon Point,
Duwamish Crossing
July 18, 2024*



Today's Agenda

- 1. Project Background***
Context & Engagement
Corridor Opportunities
Long-Span Guideway Structures
- 2. Pigeon Point***
- 3. Duwamish Crossing***

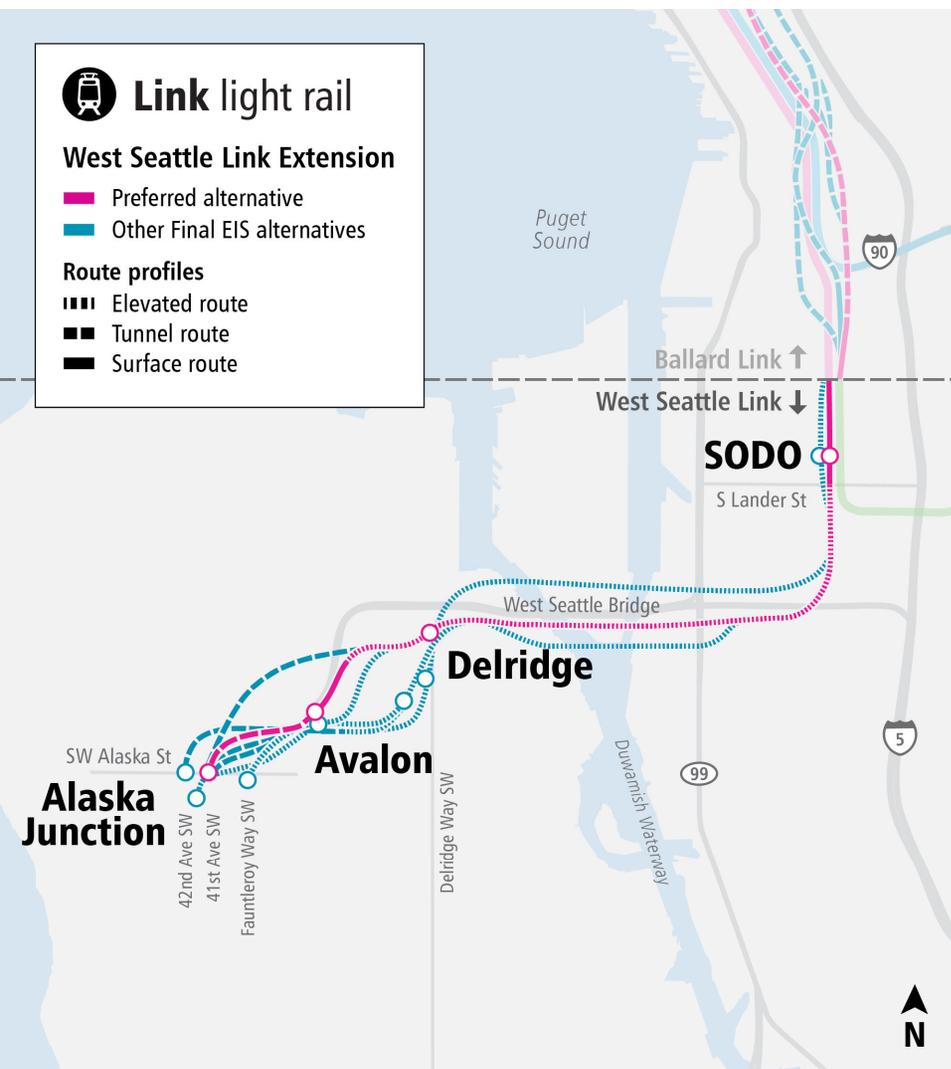
Link light rail

West Seattle Link Extension

- Preferred alternative
- Other Final EIS alternatives

Route profiles

- Elevated route
- Tunnel route
- Surface route



West Seattle Link Extension (WSLE)

- ✓ Included in Sound Transit 3 (ST3) plan passed by voters in 2016.
- ✓ Provide fast, reliable light rail connections in the SODO, Delridge and West Seattle neighborhoods.
- ✓ 4.1 miles of light rail service with 4 stations.

WSLE Project timeline





PLANNING

2017–2019

Alternatives development

- ✓ Feb–March 2018: Early scoping
- ✓ Feb–April 2019: Scoping
- ✓ May–Oct 2019: Board identified preferred alternatives and other DEIS alternatives



2019–2024

Environmental review

Early 2022: Publish Draft EIS

Public comment period

Board confirms or modifies preferred alternatives

2024: Publish Final EIS

Board selects project to be built

Federal Record of Decision

PUBLIC INVOLVEMENT



DESIGN

2024–2027



Final route and station design

Station naming

Identify artists for station art

Property acquisition/relocation

Early construction activities

Construction contract procurement

Permitting

PUBLIC INVOLVEMENT

Final Design Milestones



- *Future design reviews in Final Design*
- *Each review informs the next phase*
- *Design Element Matrix identifies key elements for each phase*

Context and Engagement

Original Stewards and Displacement



Historic House on Shilshole

Hwehlichtid's house at Shilshole with canoe anchored offshore, circa 1905

Image Source :UW Libraries - "City of the Changers: Indigenous People and the Transformation of Seattle's Watersheds," by Coll Thrush, Pacific Historical Review, (2006) Vol. 75, No. 1

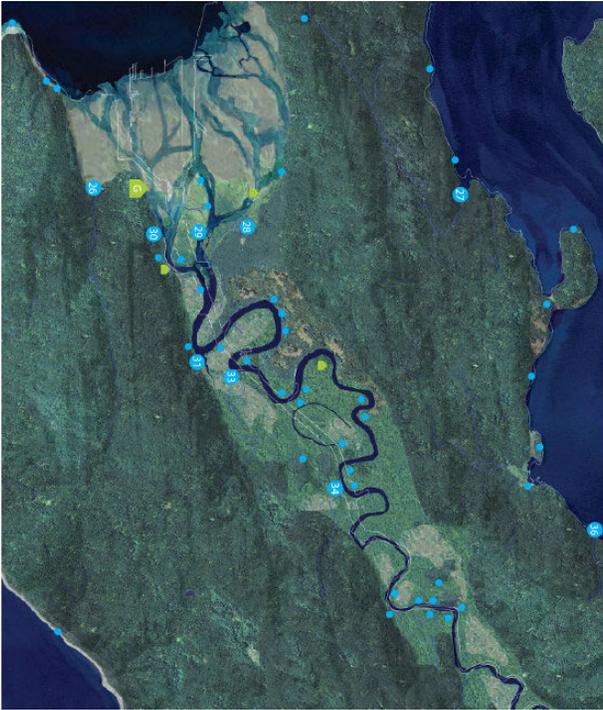


Displacement by Settlers

Ballast Island – camp for displaced native peoples circa 1890-1944

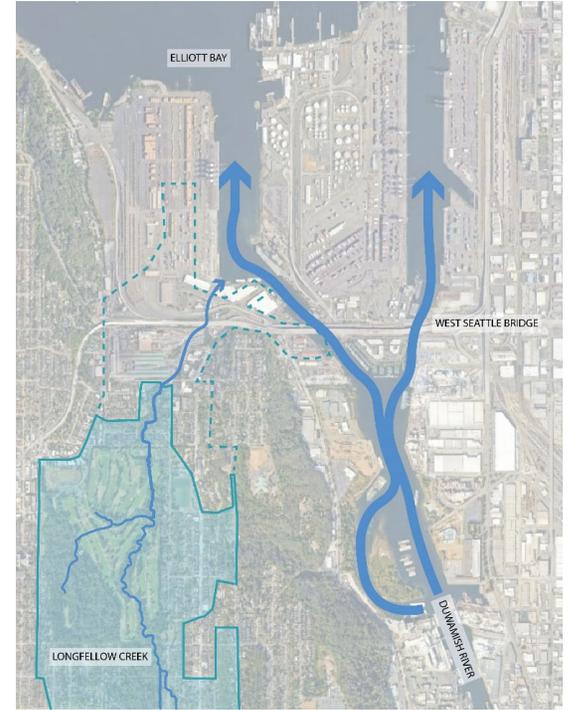
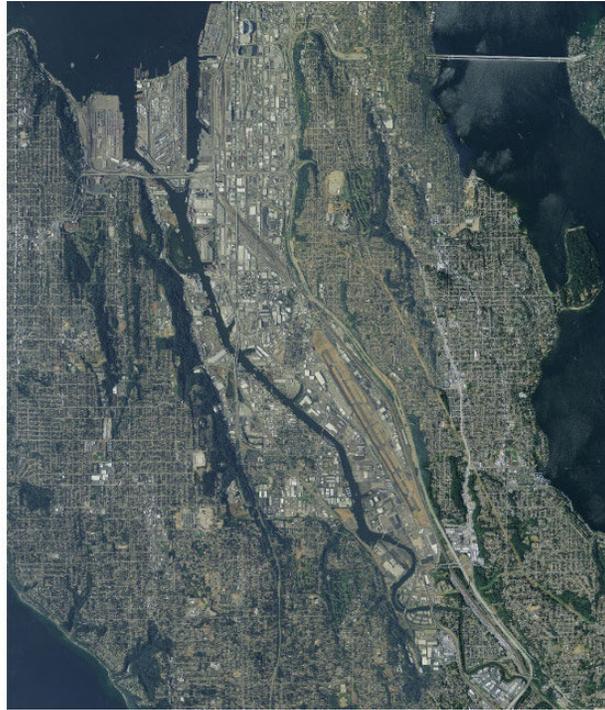
Image Source: MOHAI, David T. Denny Jr. Family Papers

Waterway History



Duwamish Waterway

Image source: The Waterlines Project – Burke Museum



Longfellow Creek Watershed

Duwamish Waterway & Tribal Practices



Annual Tribal Fishing

Since time immemorial Tribes have fished on the local waterways as their main source of nourishment and substance

Image Source: MOHAI, David T. Denny Jr. Family Papers



Tribal Transportation

Canoeing on the Duwamish River is just one of many ways Coastal Salish people are active in and present in the Pigeon Point area

Image source: UW Department of Environmental & Occupational Health Sciences

Tribal Engagement

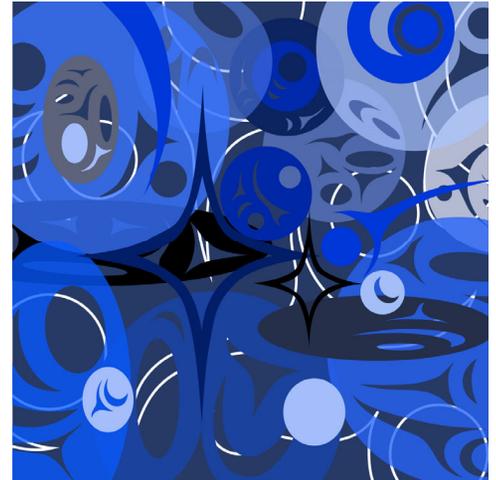
***Federal Consultation on Cultural Resources
and Fisheries***

***Engagement with Federally and non-Federally
recognized Tribes to understand concerns and
desires for Project***

Tribal Engagement

Themes from Tribal Engagement:

- ***Education of public on Indigenous history***
- ***Preserve culture***
- ***Restore natural environment***
- ***Increase access to natural resources***
- ***Protect cultural resources***



Anthony Duenas, Puyallup Tribe of Indians, Sounder Tacoma Dome Station, 2024.
swelax™ - Power

Tribal Engagement

Project elements we have discussed with potential Tribal input:

- ***Station features***
- ***Art***
- ***Interpretive signage***
- ***Landscape design and restoration***
- ***Integrate Lushootseed into system***



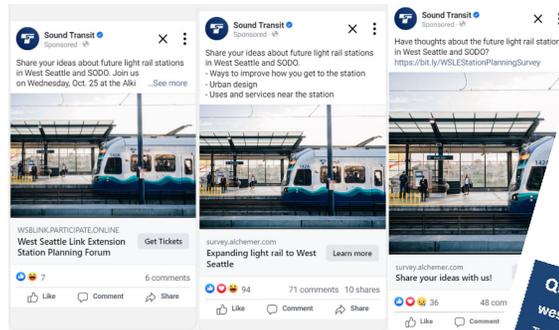
Qwalsius-Shaun Peterson, Puyallup Tribe of Indians, with his artwork for the Sounder Puyallup Station garage, the first artwork expressing the Tribe's heritage in the City named after the Tribe.

Community Engagement

Public outreach efforts began in Feb 2018, with varied and broad-reaching methods

- ***Briefings***
- ***Open houses and neighborhood forums***
- ***Public hearings***
- ***Fact sheets and brochures***
- ***Community events***
- ***Project webpage***
- ***News media***
- ***Potentially Affected Property notification***
- ***Database***
- ***Targeted Outreach***

Building Public Awareness



Mở rộng đường sắt hạng nhẹ ở Seattle

Hãy đóng góp ý kiến về các tuyến đường và vị trí trạm tiềm năng

Xây dựng tương lai của bạn

Seattle 輕軌擴建

請立即發表您對潛在的路線及車站位置的意見

Expanding light rail to West Seattle

Learn about next steps for future light rail station design in West Seattle and SODO

soundtransit.org/wslink-design

Please join us on Tuesday, March 5 for a West Seattle Link Extension Station Planning Open House. We'll share a summary of community priorities for future light rail station design in West Seattle and SODO, based on feedback we heard from the public in fall 2023. You can see how your feedback is informing ongoing design for the project and learn about what's next.

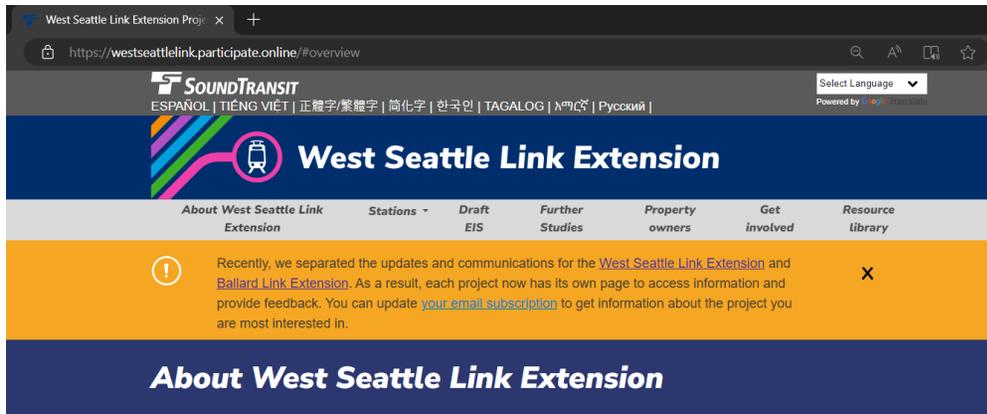
West Seattle Link Extension Station Planning Open House
Tuesday, March 5, 2024
5:30 – 7:30 p.m.
 Short presentation at 6 p.m.
 Alki Masonic Center
 4736 40th Avenue SW
 Spanish, Vietnamese, Somali, and ASL interpretation will be provided

Questions? Contact Sound Transit Community Engagement:
westseattitelink@soundtransit.org or 206-903-7229

To request accommodations for persons with disabilities, information in alternate formats such as braille or large print, or to request an interpreter, contact project staff two to three weeks in advance of public meetings at (206) 903-7229/TTY: 711 or email wslink@soundtransit.org.

Para información acerca del proyecto llame al: 800-823-9230
 1 免費解語音資訊, 請致電: 800-823-9230 | 1/A 7C 923 923
 hãy gọi: 800-823-9230 | Để biết thông tin về dự án,
 hãy gọi: 800-823-9230

Adaptive, Creative, Accessible



The West Seattle Link Extension will provide fast, reliable light rail connections to dense residential and job centers in the SODO, Deiridge, and West Seattle neighborhoods. The West Seattle Link Extension is part of the regional transit system expansion approved by voters in November 2016.

West Seattle Link Extension

- Adds 4.1 miles of light rail service from SODO to West Seattle's Alaska Junction neighborhood.
- Includes four new stations from SODO to Alaska Junction.
- Start of service scheduled for 2032.

West Seattle Link Extension project timeline

2016 Voter Approval ✓

2017-2024 Planning +

2024-2027 Design +

2027-2032 Construction +

West Seattle Link Extension Station Planning

Thank you to everyone that was able to attend our station planning events.

[Oct. 25, 2023 meeting materials](#)

[Station and Access Planning Engagement Summary](#)

[March 5, 2024 meeting materials](#)

Stay engaged!

Get upcoming project news and public involvement opportunities.

[Subscribe now](#)



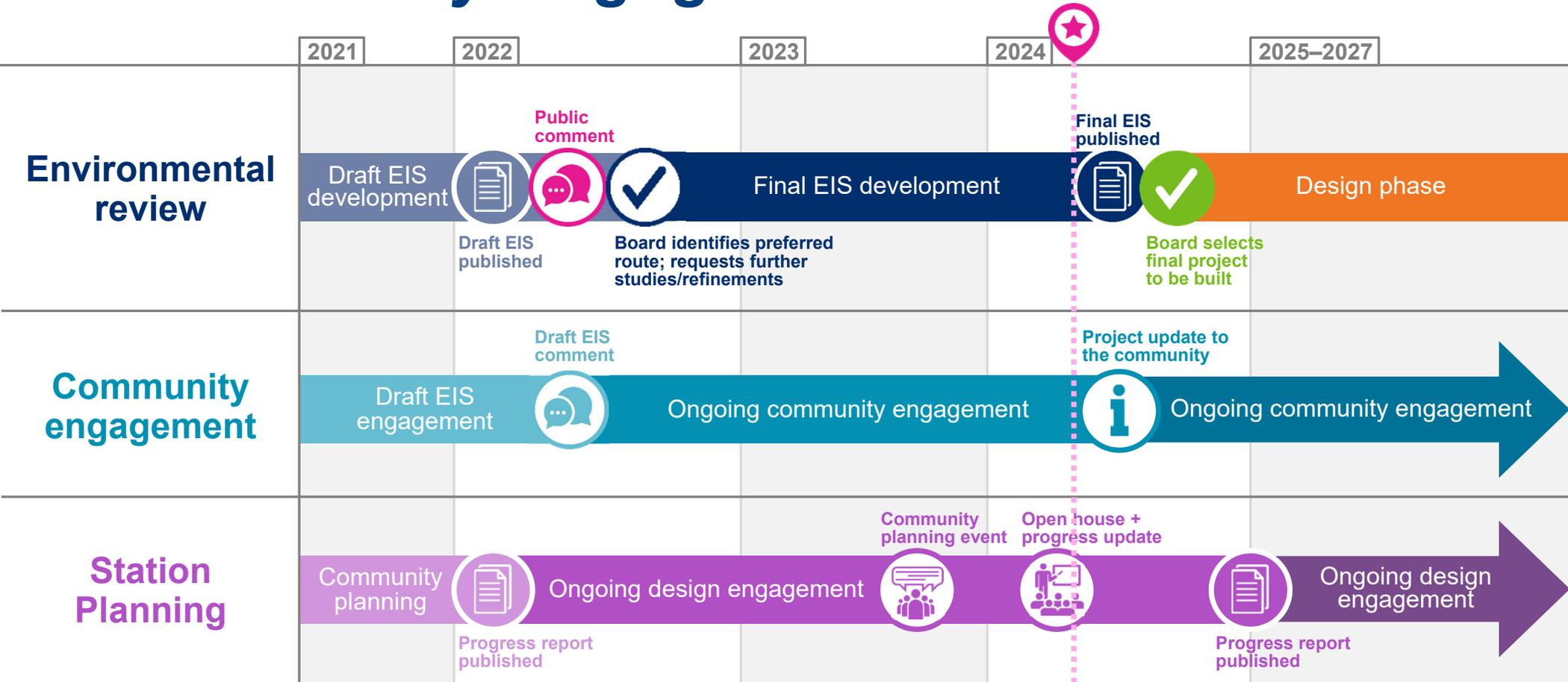
Capacity Building, Expanding Our Reach

Community liaisons focused on *Delridge corridor in the RET communities*, provided strategic guidance/support with:

- Door-to-door business outreach
- Engaging at community events, fairs, festivals and other tabling opportunities
- Ethnic media and community presentations
- Enhancing in-language accessibility, commenting and feedback
- Recruiting in-language focus groups participants



Community Engagement Schedule



WSLE Station Planning Engagement



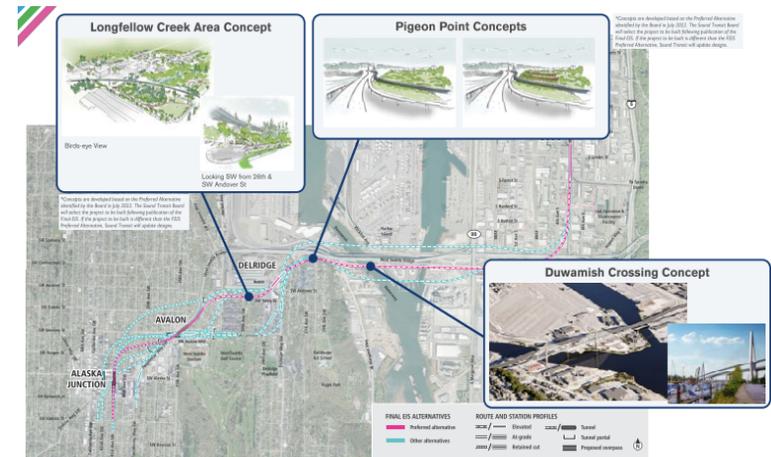
Two WSLE Open Houses in West Seattle; two SODO drop-in

Oct. 25, 2023 West Seattle Station Planning Forum

- ✓ Nearly 200 people attended.
- ✓ 1,232 completed English and in-language online survey.
- ✓ Gathered feedback on access, urban design, and transit-oriented development (TOD) topics.

Mar. 5, 2024 West Seattle Station Planning Open House

- ✓ Nearly 230 people attended.
- ✓ Shared station design progress and a summary of community priorities based on feedback we heard in Fall engagement.
- ✓ Opportunity for additional inputs.



Material from Mar. 5 WSLE Open House

WSLE Station Planning Engagement (Fall '23-Spring '24)



1,232

Completed English and in-language online survey



2

In-person Open Houses

engaging more than

425

attendees



2

In-person WSLE SODO drop-in



2

In-language focus groups

Vietnamese; Somali and other East African languages



8

email updates

engaging more than

12,417

subscribers



Materials translated into multiple languages to support equitable engagement



10

Community briefings



6

Fairs, festivals and other tabling events



Ads

featured on 11 unique and local digital publications



360K

Impressions

on social media posts

2,000+ link click



900+ posters

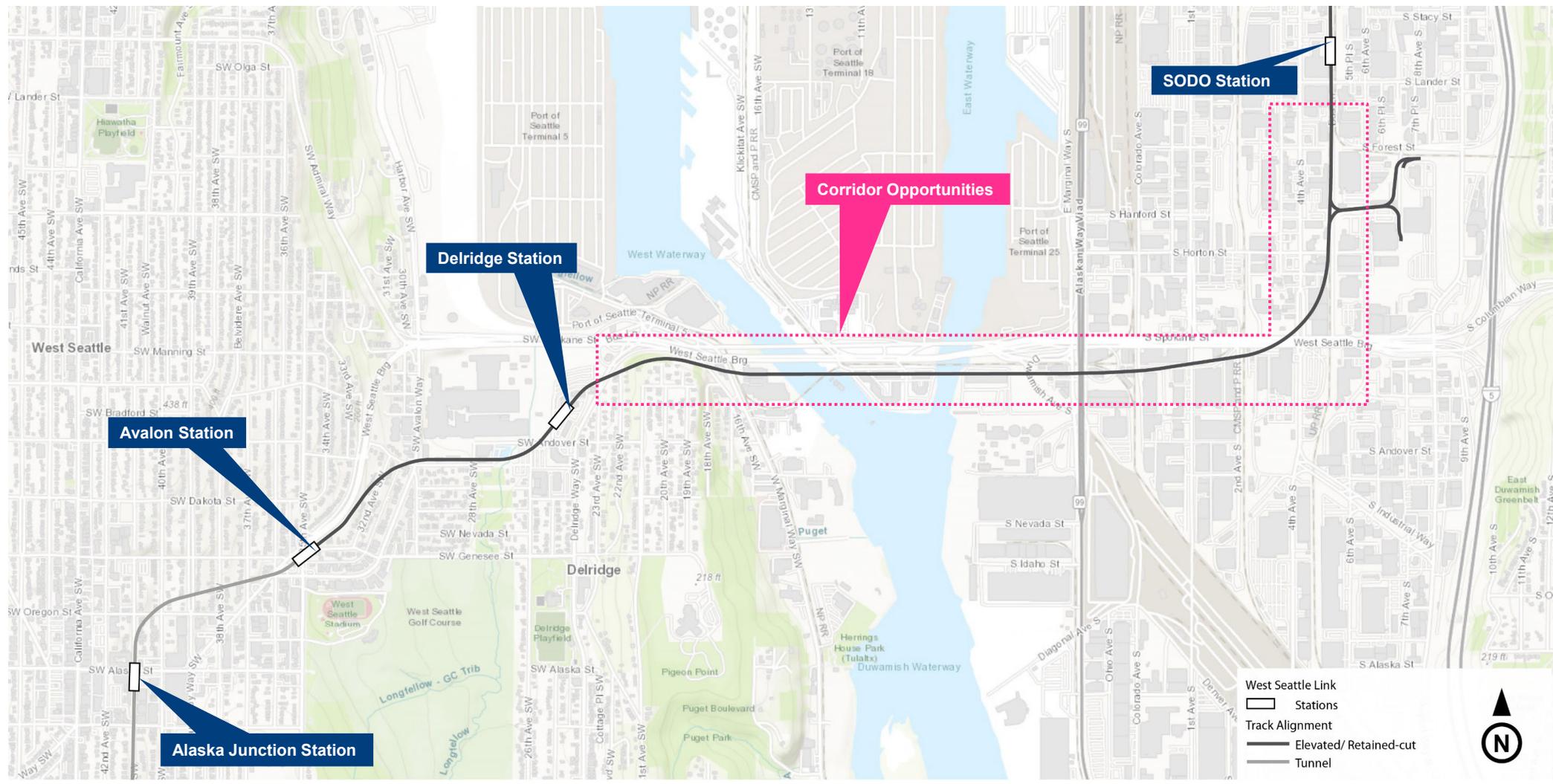
delivered along the corridor



6 Community liaisons

engaging Delridge corridor's RET communities and local businesses

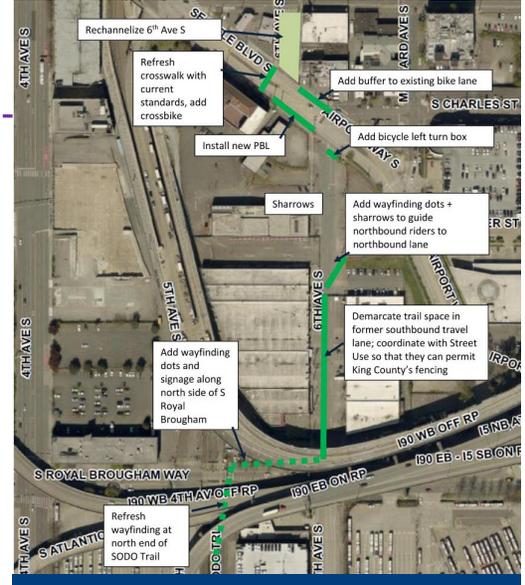
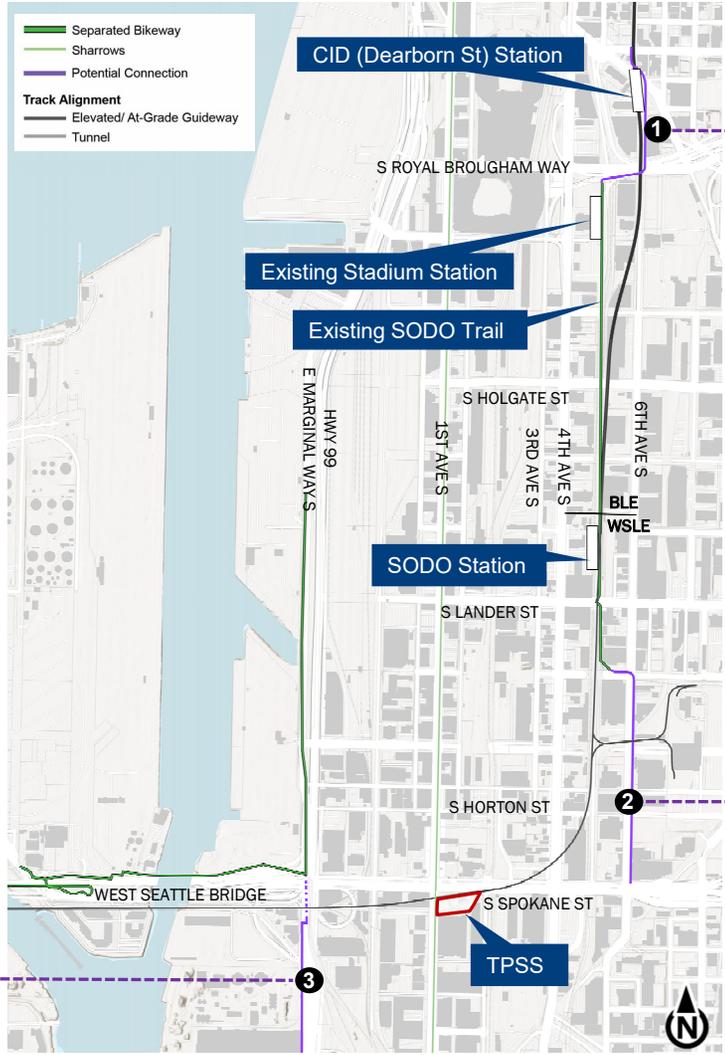
Corridor Opportunities



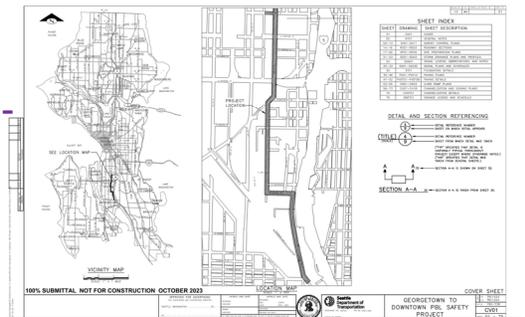




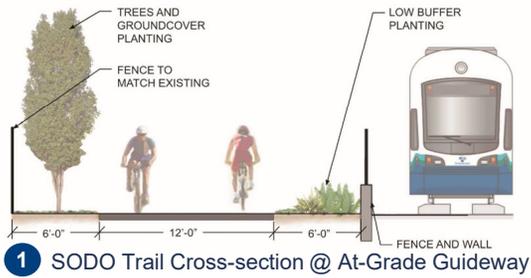
E Marginal Way Corridor Improvement project – City of Seattle



Georgetown to Downtown – City of Seattle



Georgetown to Downtown – City of Seattle



SODO Station & Trail



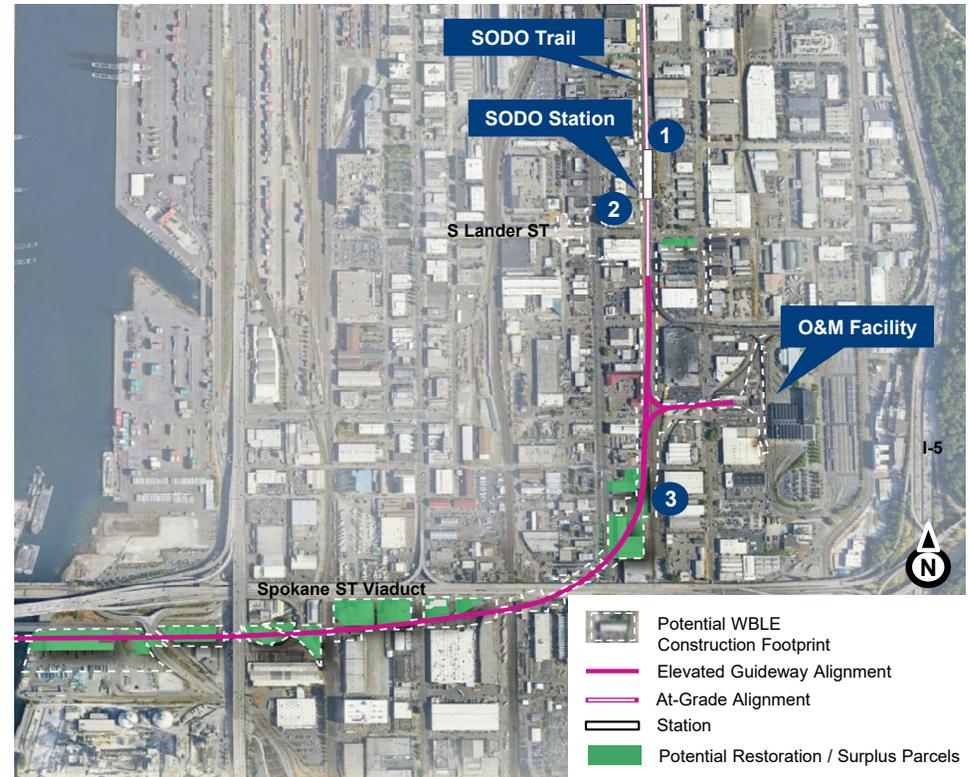
"Stitch" Art Sculpture in Evanston, IL

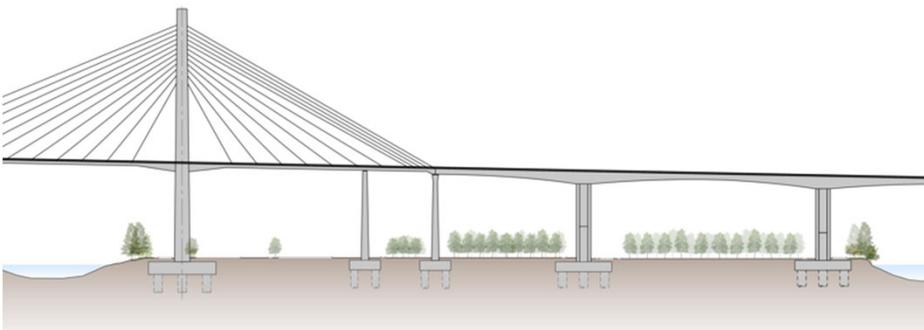
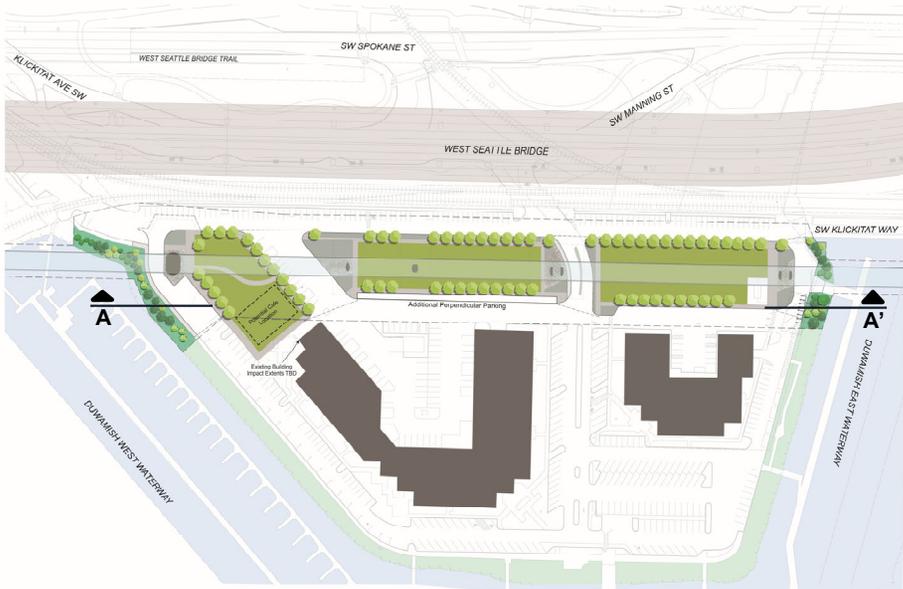


GSI at Northgate Station / Seattle, WA

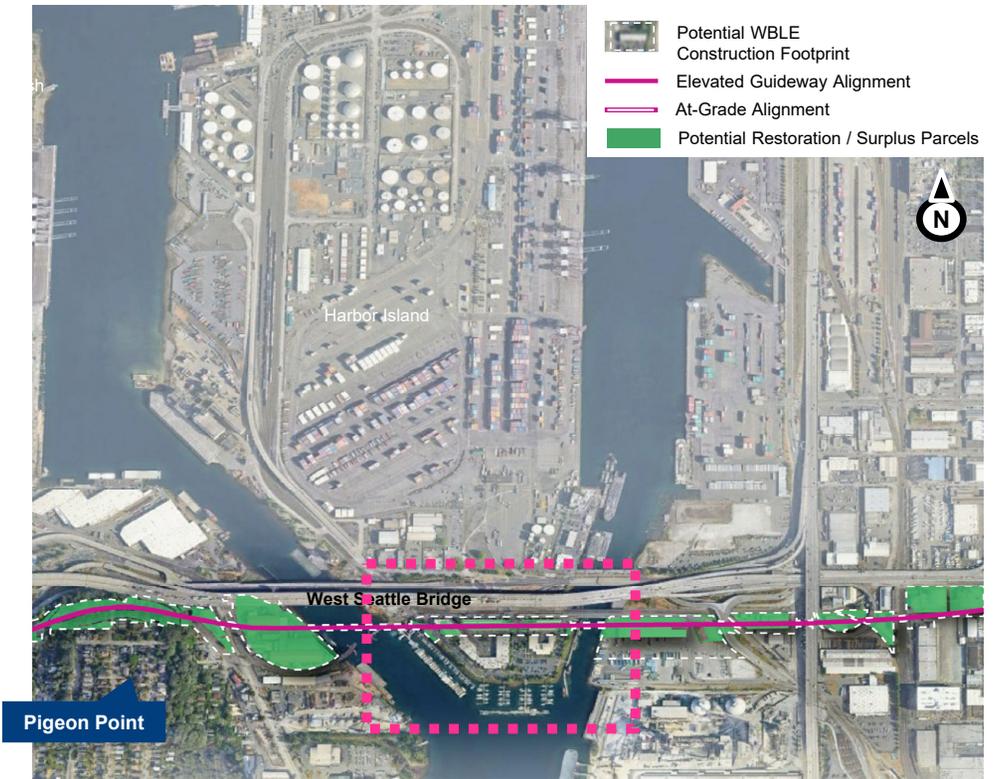


Story Wall in Eskilstuna, Sweden





Section/Elevation A-A'



Wilburton Station, Bellevue, WA



Aurora Bridge Bioswales, Seattle, WA

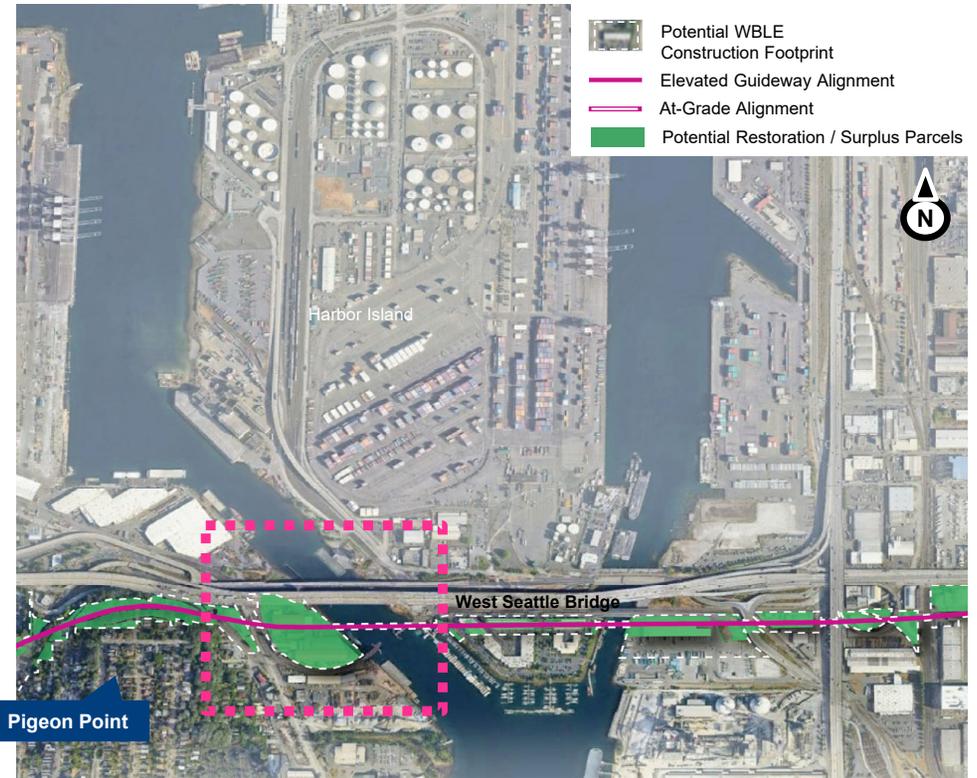
27 Harbor Island Area



Section A-A'



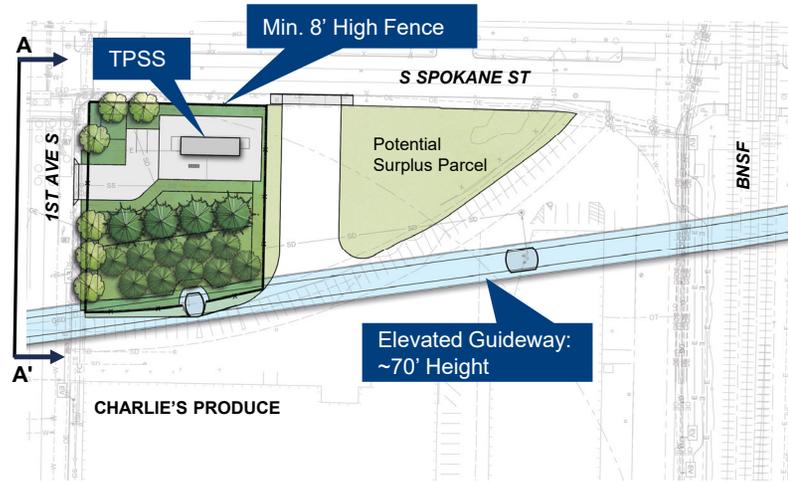
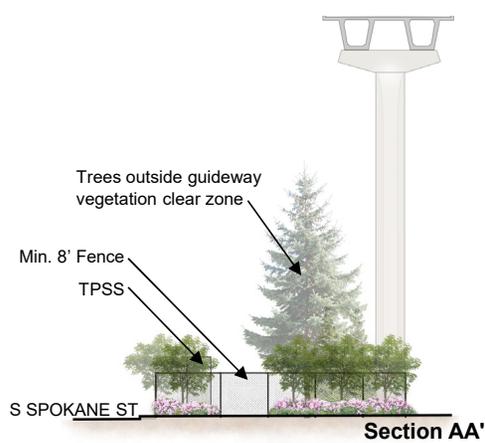
1



Skytrain, Richmond, BC



Aurora Bridge Bioswales, Seattle, WA

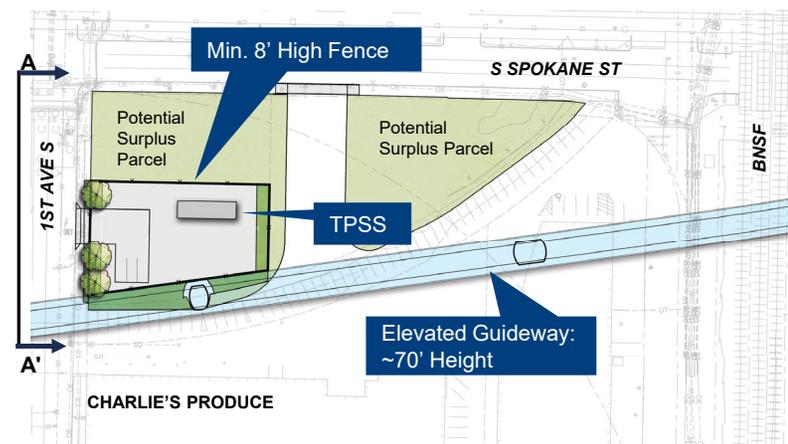
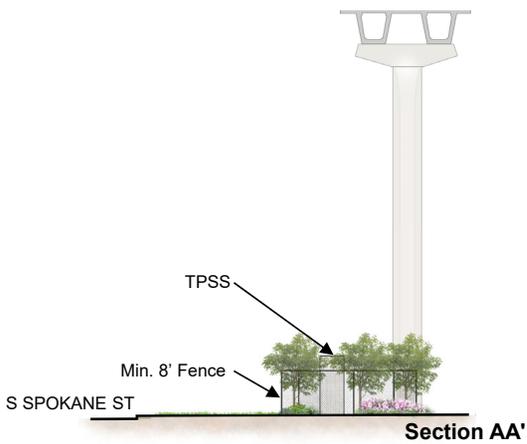


PE Concept: TPSS @ 1st Ave S & S Spokane St Intersection

Note: TPSS Enclosures are designed to reflect surrounding neighborhood



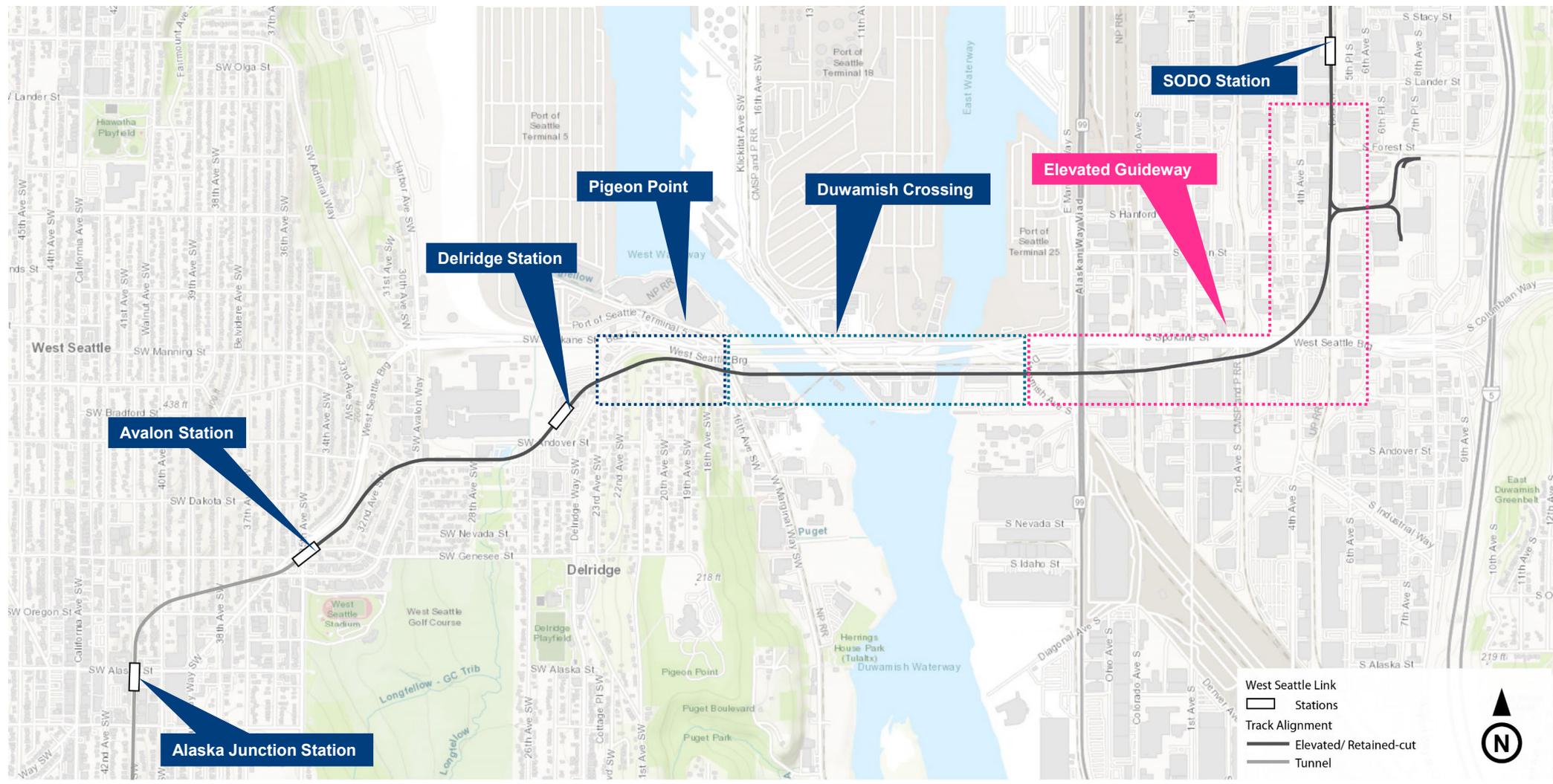
TPSS Enclosure Example (Eastlink)



Alternative: TPSS close to Guideway to allow for development opportunities along S Spokane St



Long-Span Guideway Structures



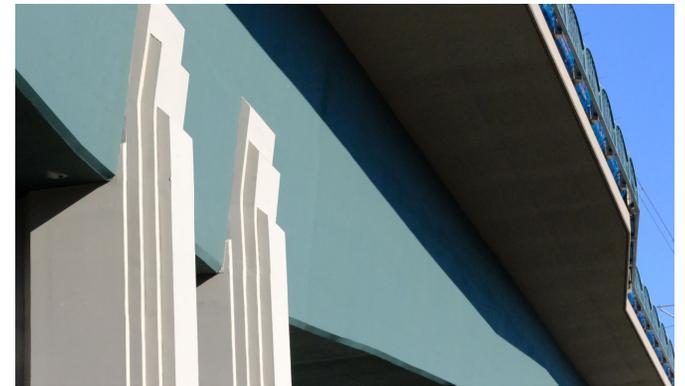
Long-Span Guideway

- ***Superstructures are segmental box girders with balanced cantilever construction***
- ***Segmental box girders are selected for functionality, structural efficiency, redundancy, previous ST practices, and minimum on-ground impact***
- ***Majority of piers are double-leaf columns with a fill section between the two leaves near the bottom for tall piers***
- ***Double-leaf columns are evolutions from previous ST projects***
- ***Piers are envisioned to be compatible with the cable-stayed piers***

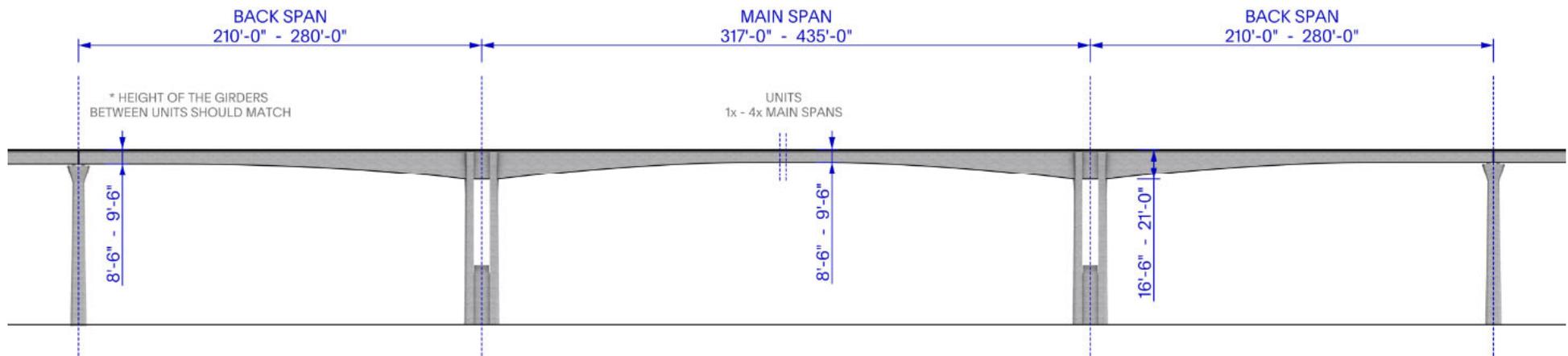
Central Link Examples



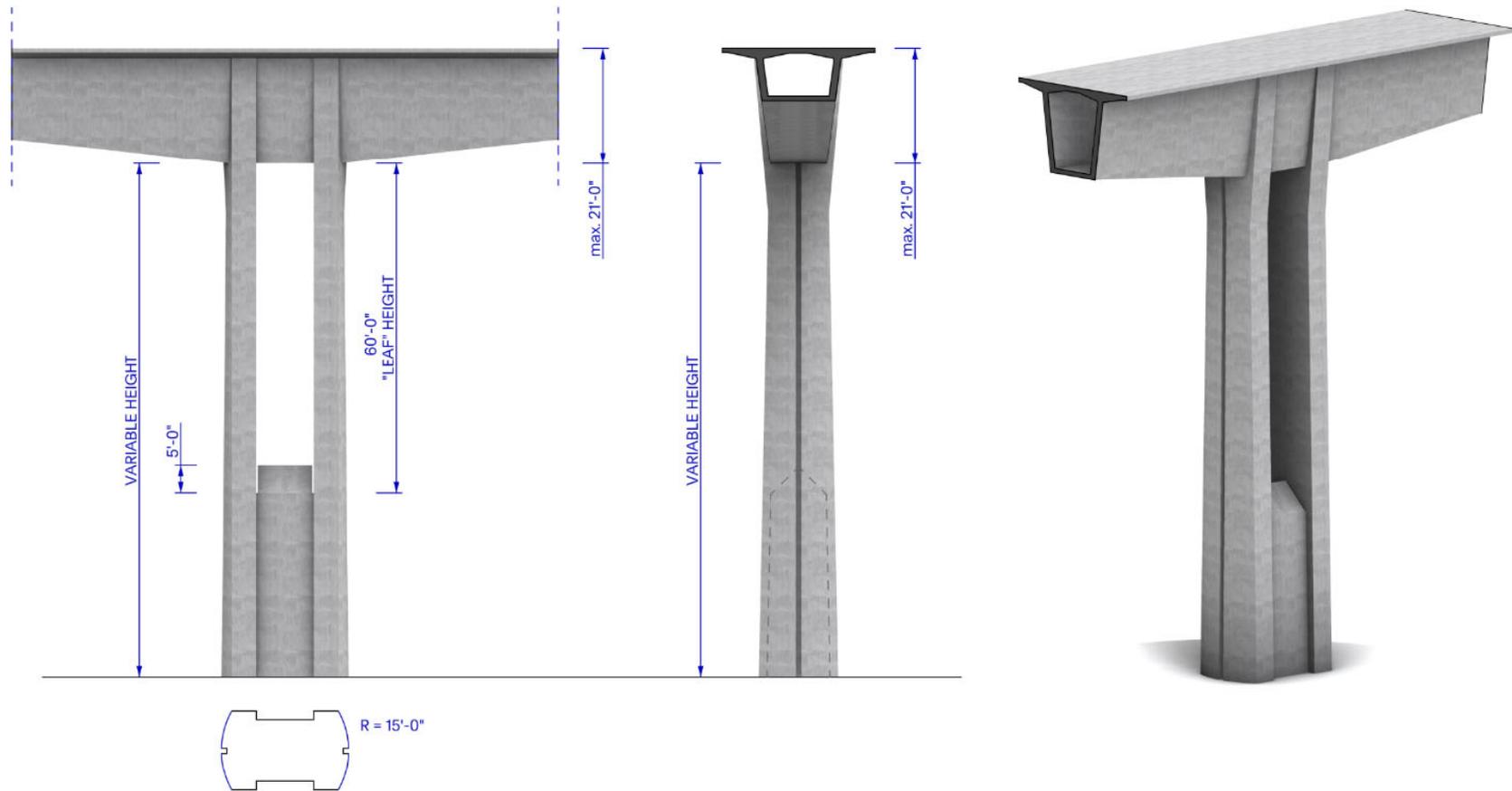
East Link Examples



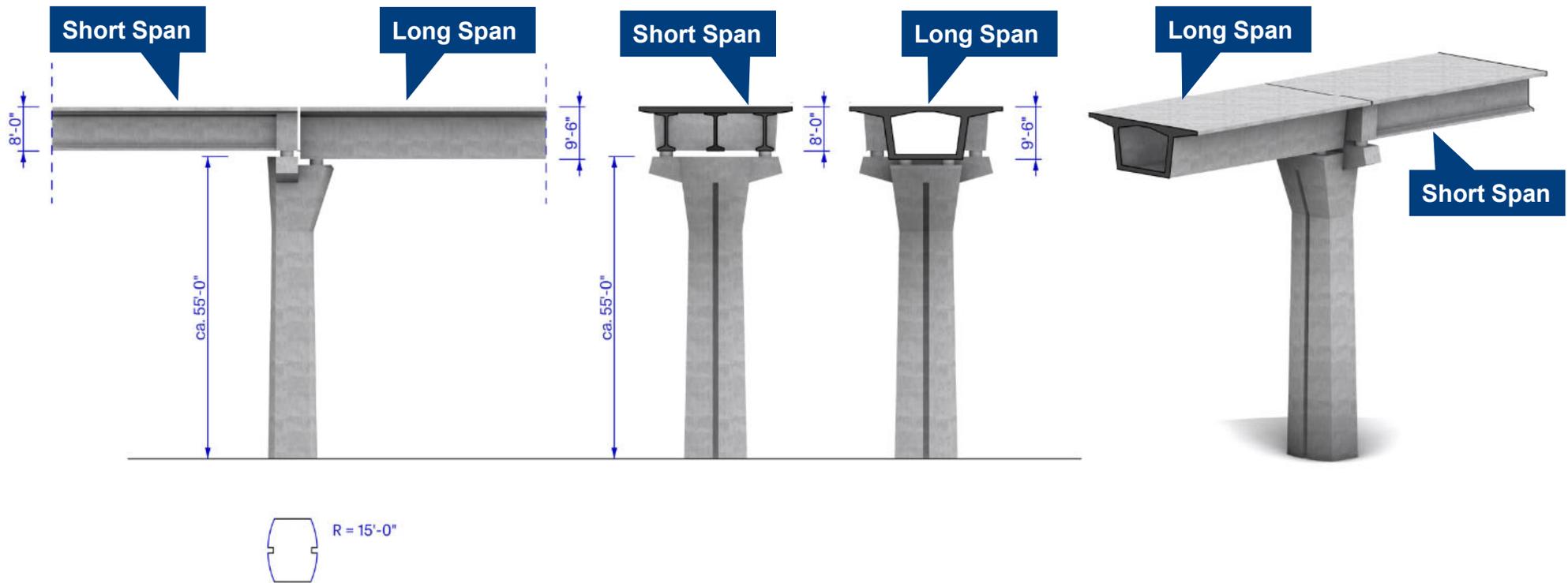
Proportion and Scale: Principle



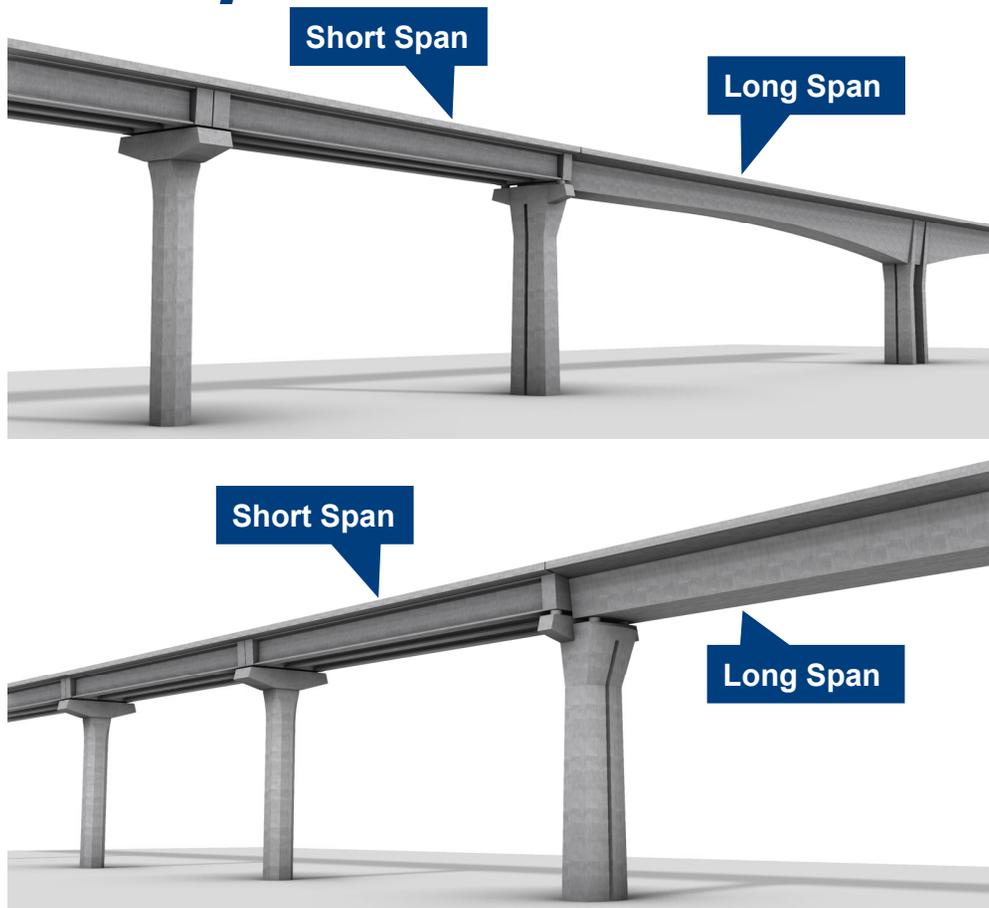
Proportion and Scale: Integral Piers



Proportion & Scale: Transition to Short Span



Proportion & Scale: Transition to Short Span



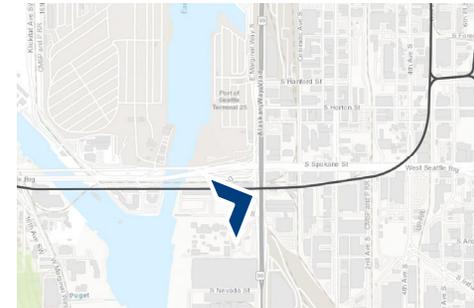
- Typical short spans are prestressed I-girders
- Columns are octagonal with a cap
- I-girders and octagonal columns have been widely used in other Sound Transit projects, including East Link, Lynnwood Link, and Redmond Link Extensions

View of Structure from Busway



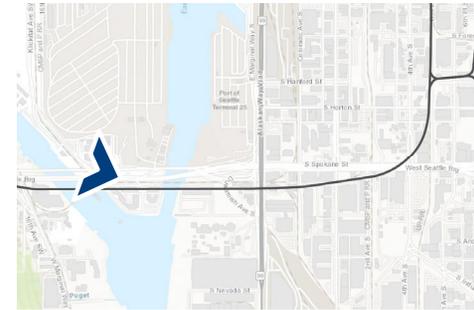
Key Plan

View of Structure from E. Marginal Way S.



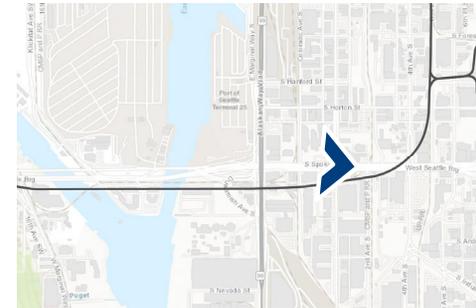
Key Plan

View from West Seattle Bridge



Key Plan

View from West Seattle Bridge



Key Plan

View from Columbian Way Ramp



Key Plan

Q&A / Discussion

Pigeon Point

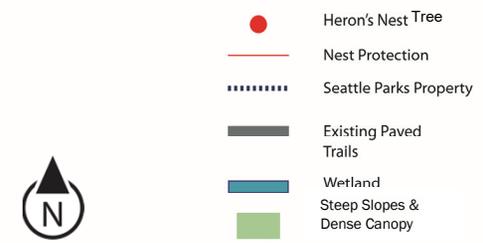
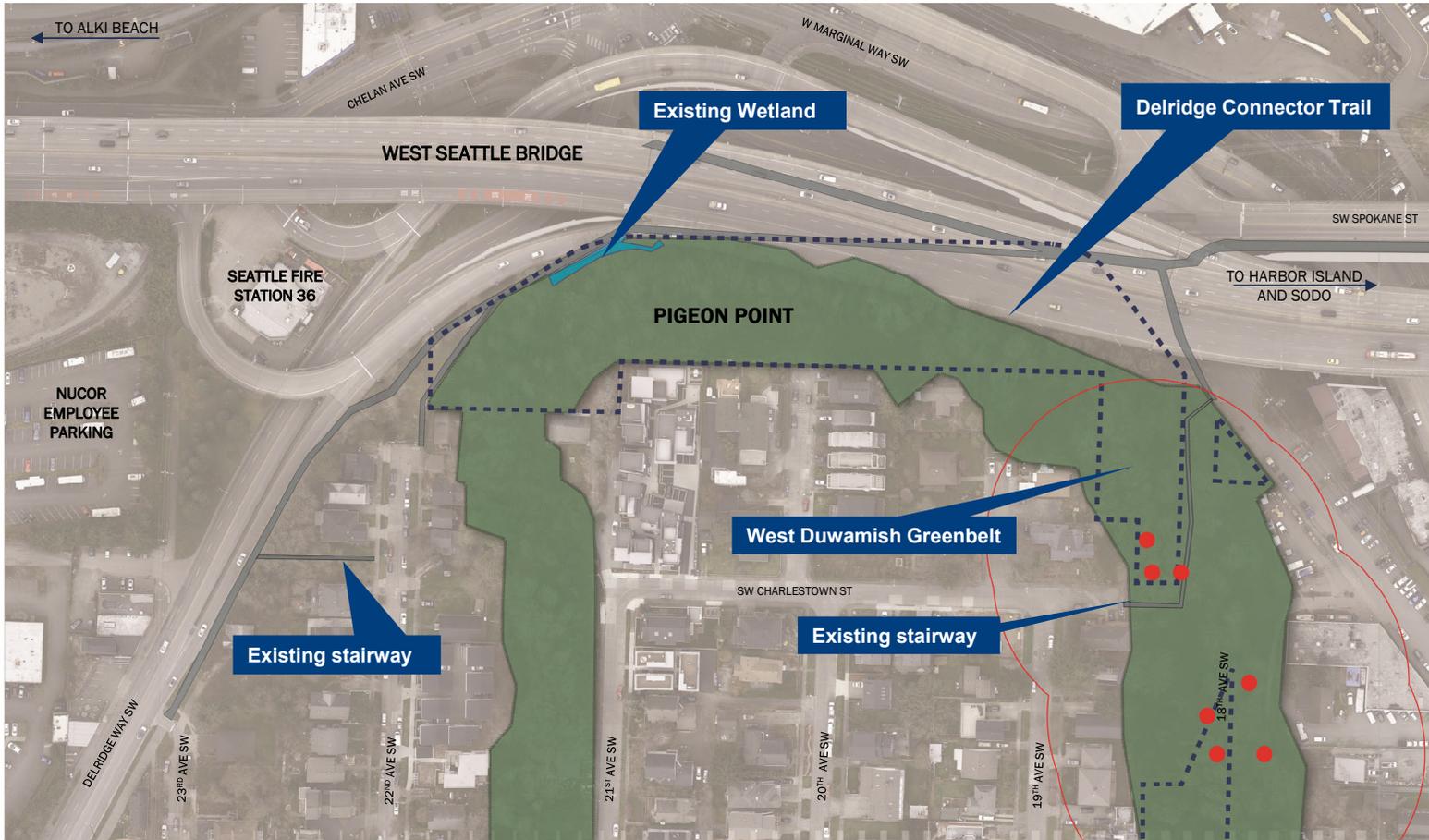
Engagement – Pigeon Point

- ***Briefings with the Pigeon Point Neighborhood Association, Duwamish Alive Coalition and Delridge Neighborhood Development Association***
- ***Briefings with West Seattle Bike Connections***
- ***Meetings with Tribes, Washington Department of Fish & Wildlife (WDFW) and U.S. Fish & Wildlife Service (USFWS)***
- ***Meetings with community organizations, including Birds Connects Seattle, Heron Habitat Helpers, Urban Raptor Center***
- ***One-on-one Meetings with property owners and tenants***

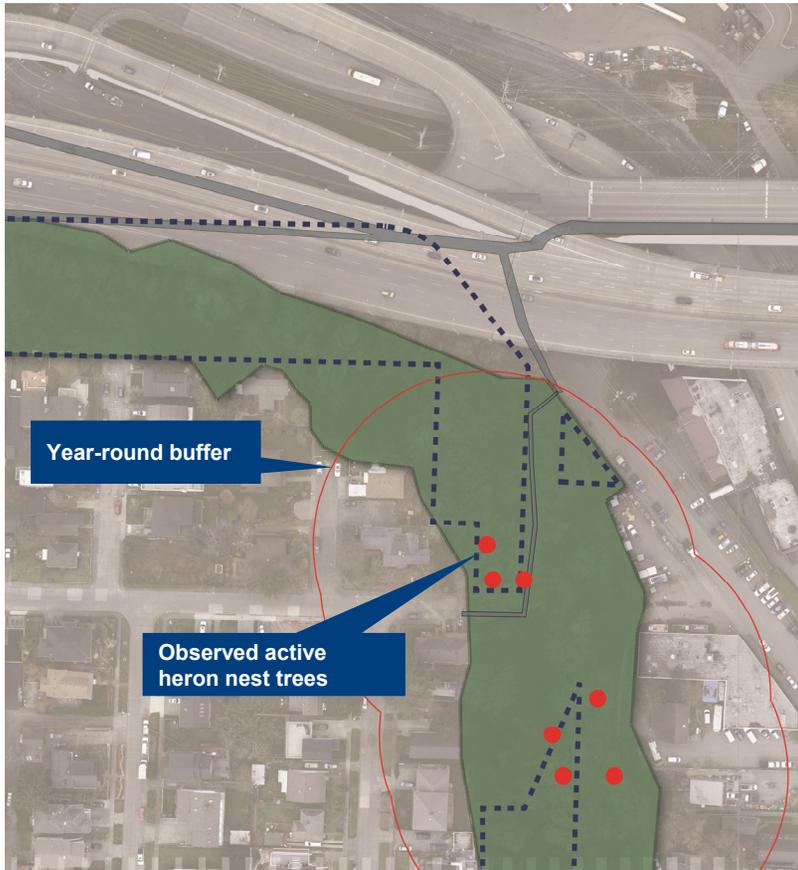
Neighborhood Pride



Habitat



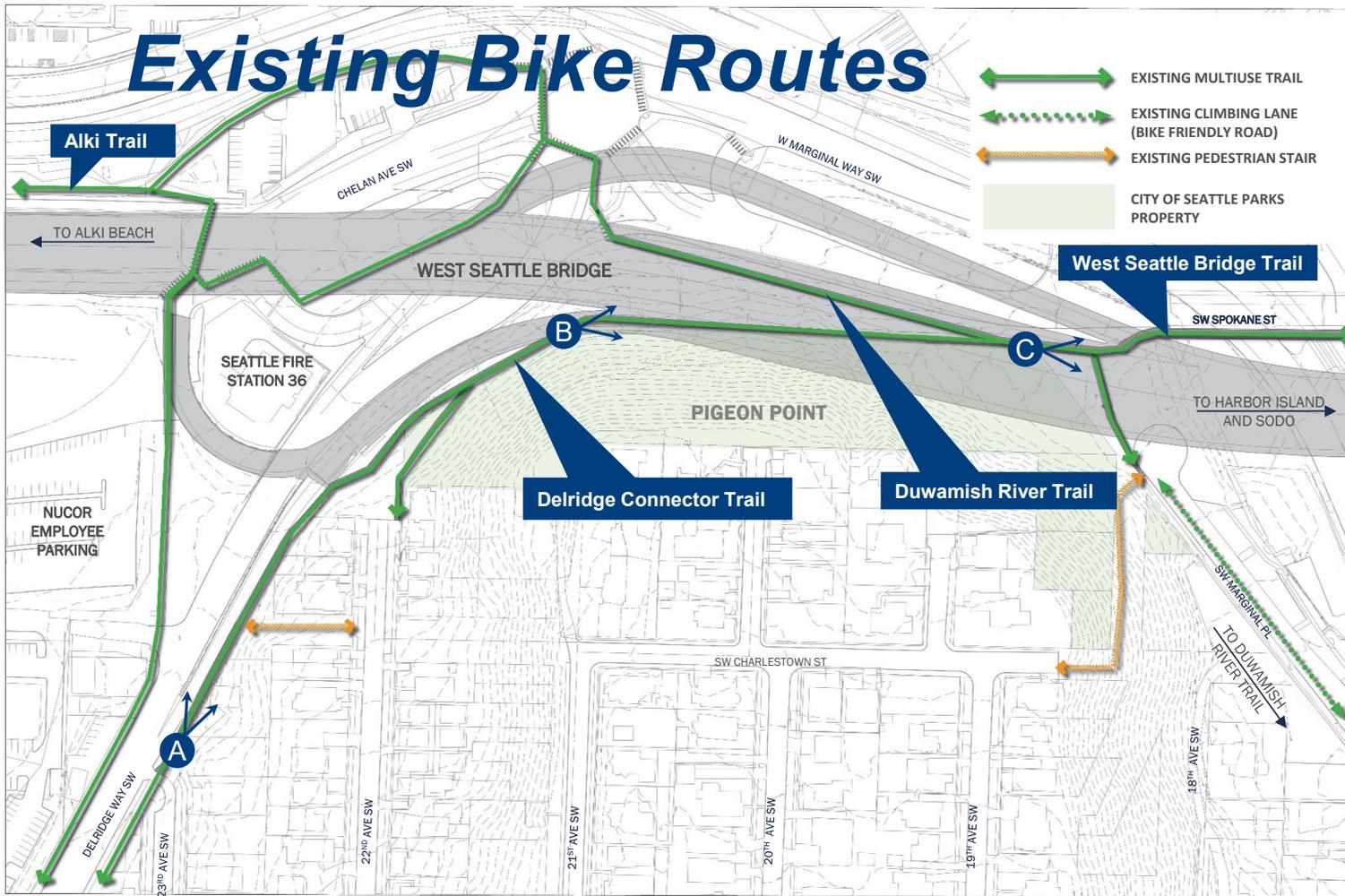
Heron Habitat



- *Sound Transit has been monitoring the heron rookeries since 2020 and we will continue to monitor as we advance design.*
- *Based on the current design and locations of heron nests, we don't anticipate impacting trees where heron nests are located.*



Existing Bike Routes



A



B

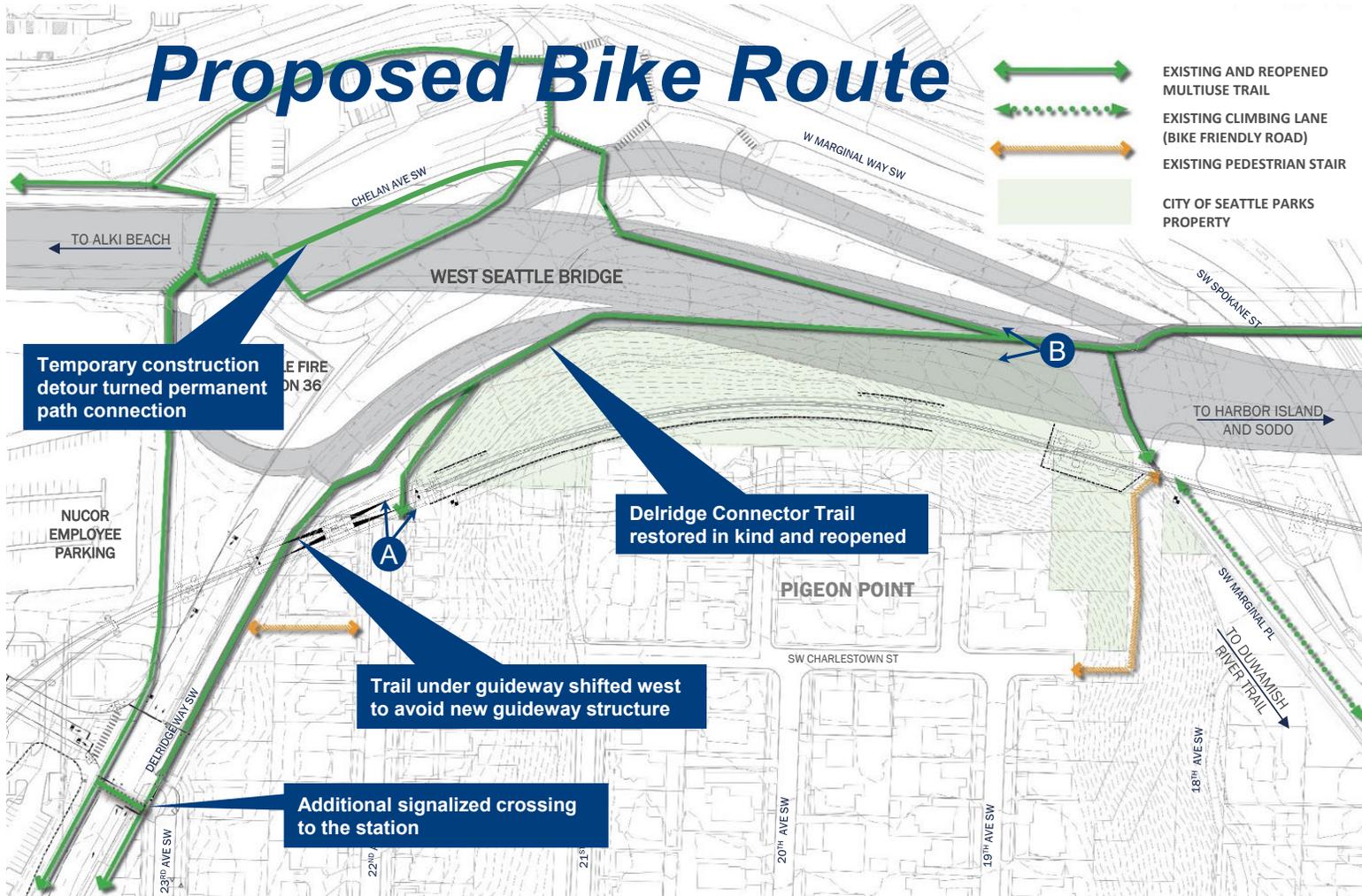


C



Proposed Bike Route

-  EXISTING AND REOPENED MULTIUSE TRAIL
-  EXISTING CLIMBING LANE (BIKE FRIENDLY ROAD)
-  EXISTING PEDESTRIAN STAIR
-  CITY OF SEATTLE PARKS PROPERTY



Temporary construction detour turned permanent path connection

NUCOR EMPLOYEE PARKING

Trail under guideway shifted west to avoid new guideway structure

Additional signaled crossing to the station

Delridge Connector Trail restored in kind and reopened



A



B



Restoration Concept Development

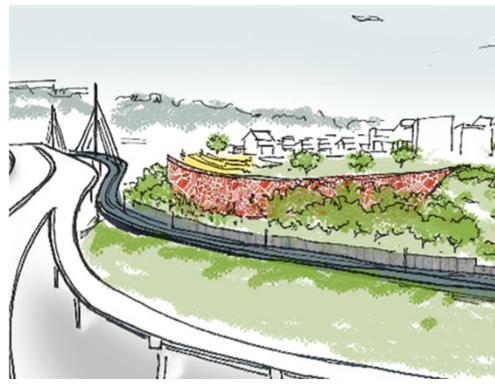
Concept Development



Baseline



Terraces



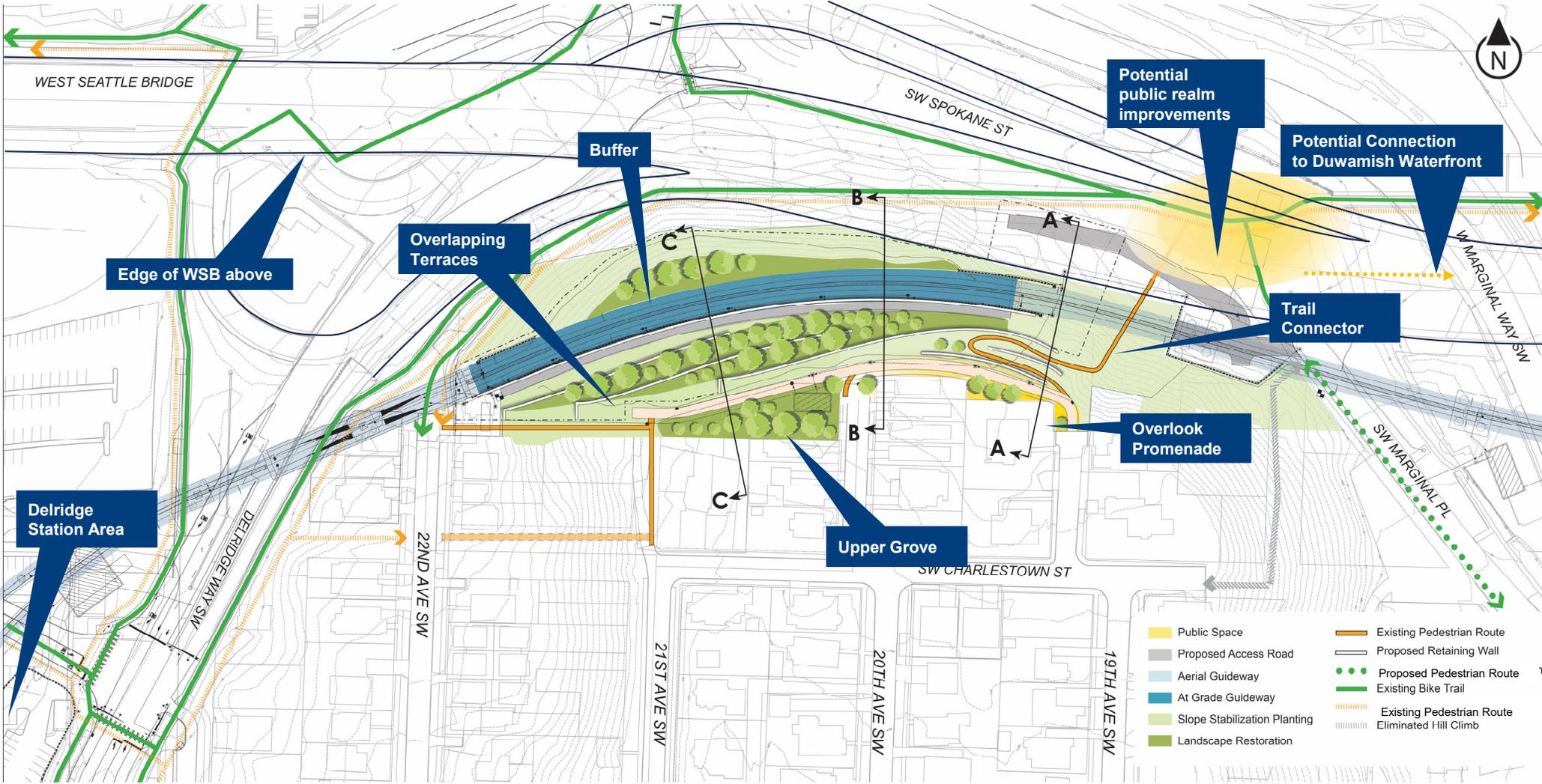
One Wall



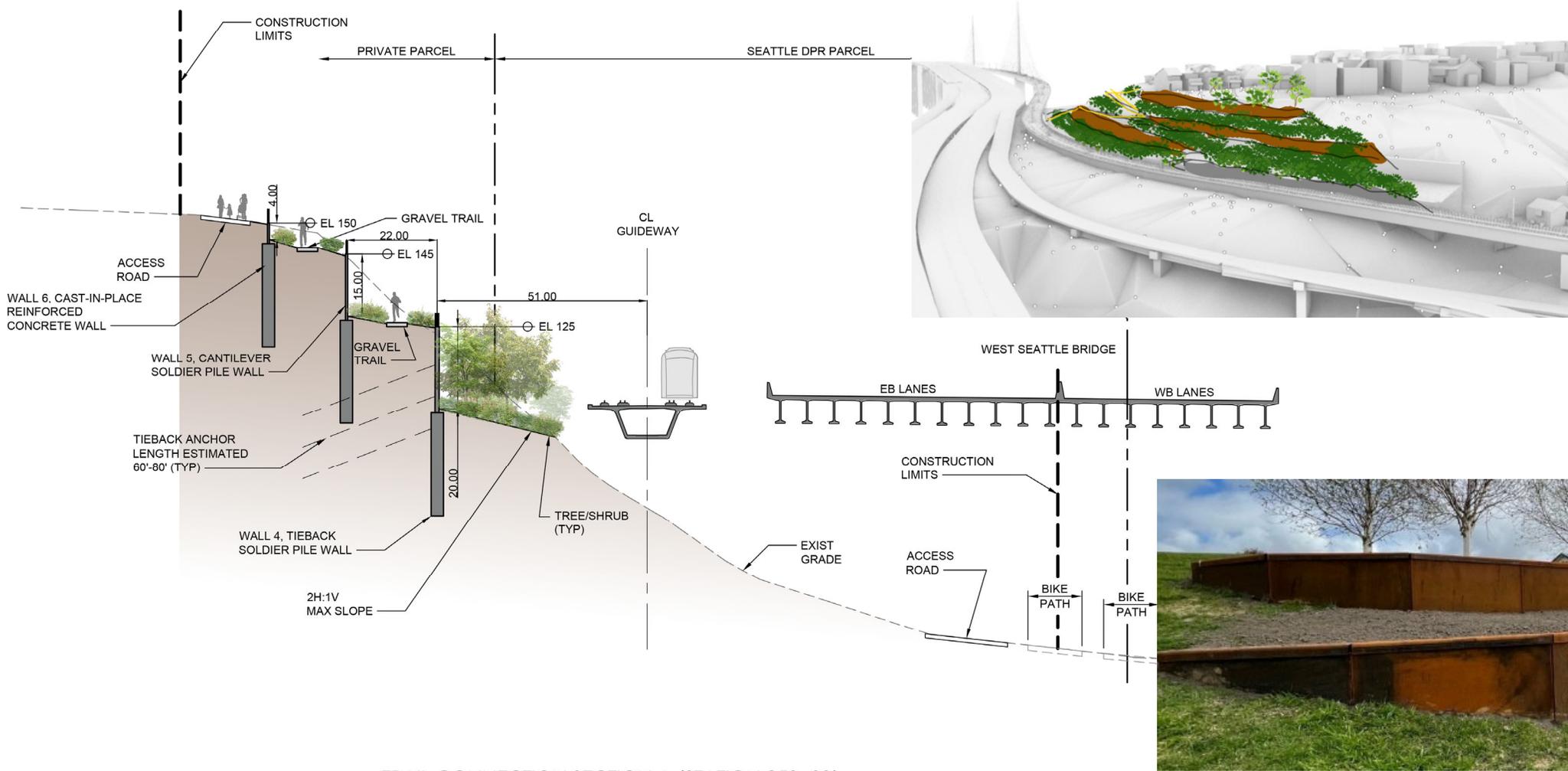
Trail

West Duwamish Greenbelt Trails

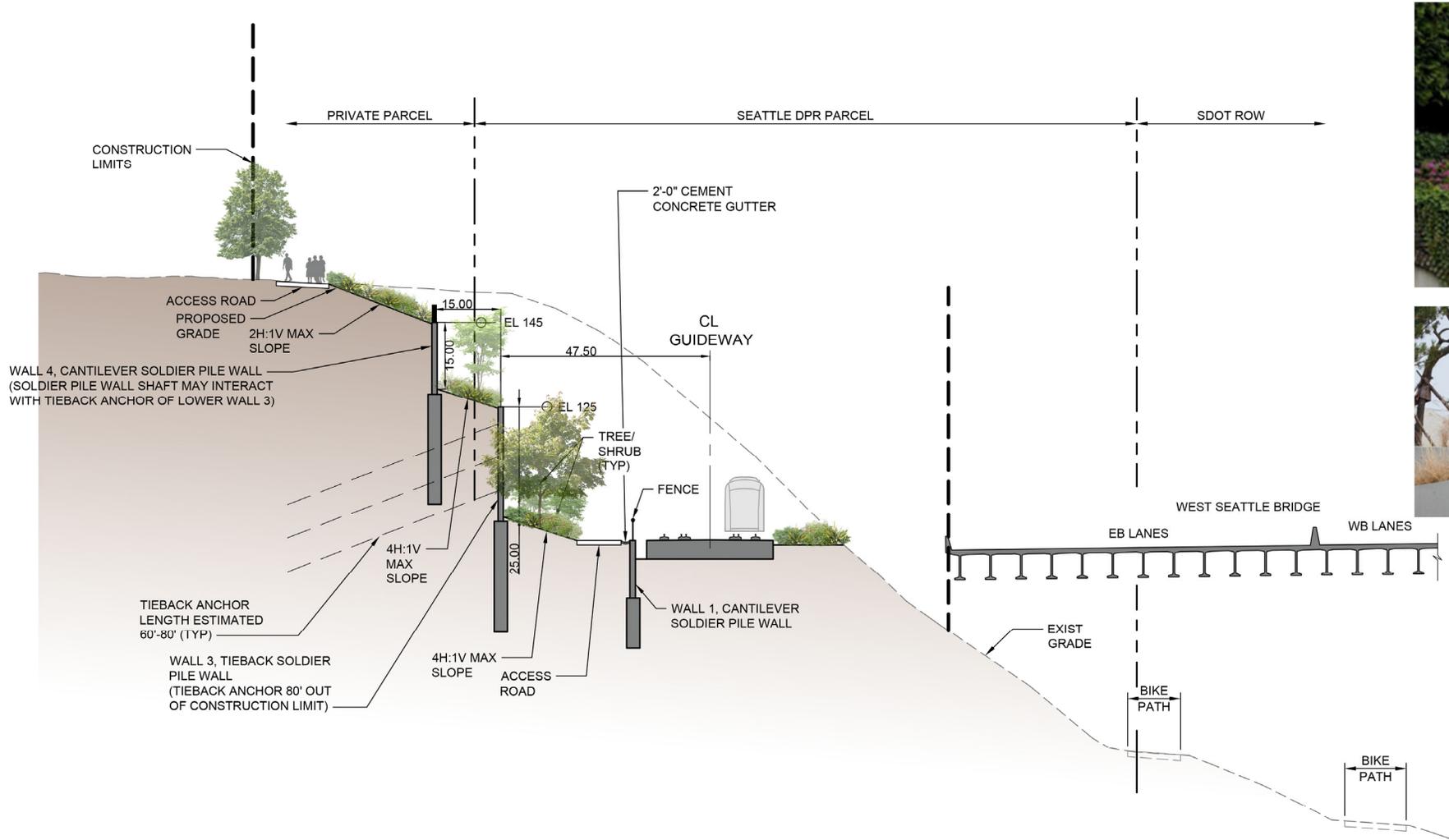




56 **Pigeon Point: Trail Hillside Concept**



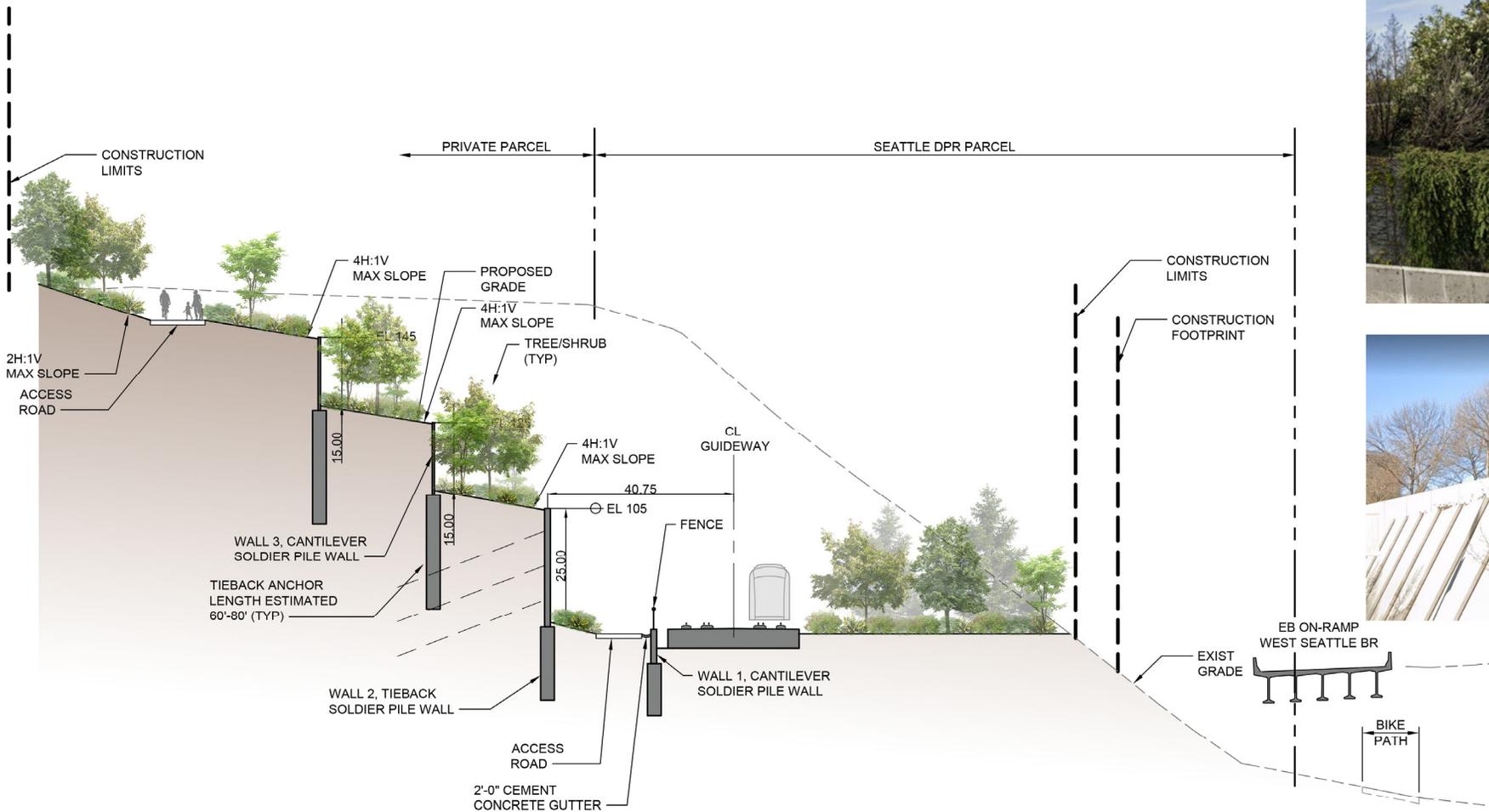
TRAIL CONNECTION SECTION A (STATION 259+00)



TRAIL CONNECTION SECTION B (STATION 261+00)



58 Pigeon Point: Trail Hillside Concept



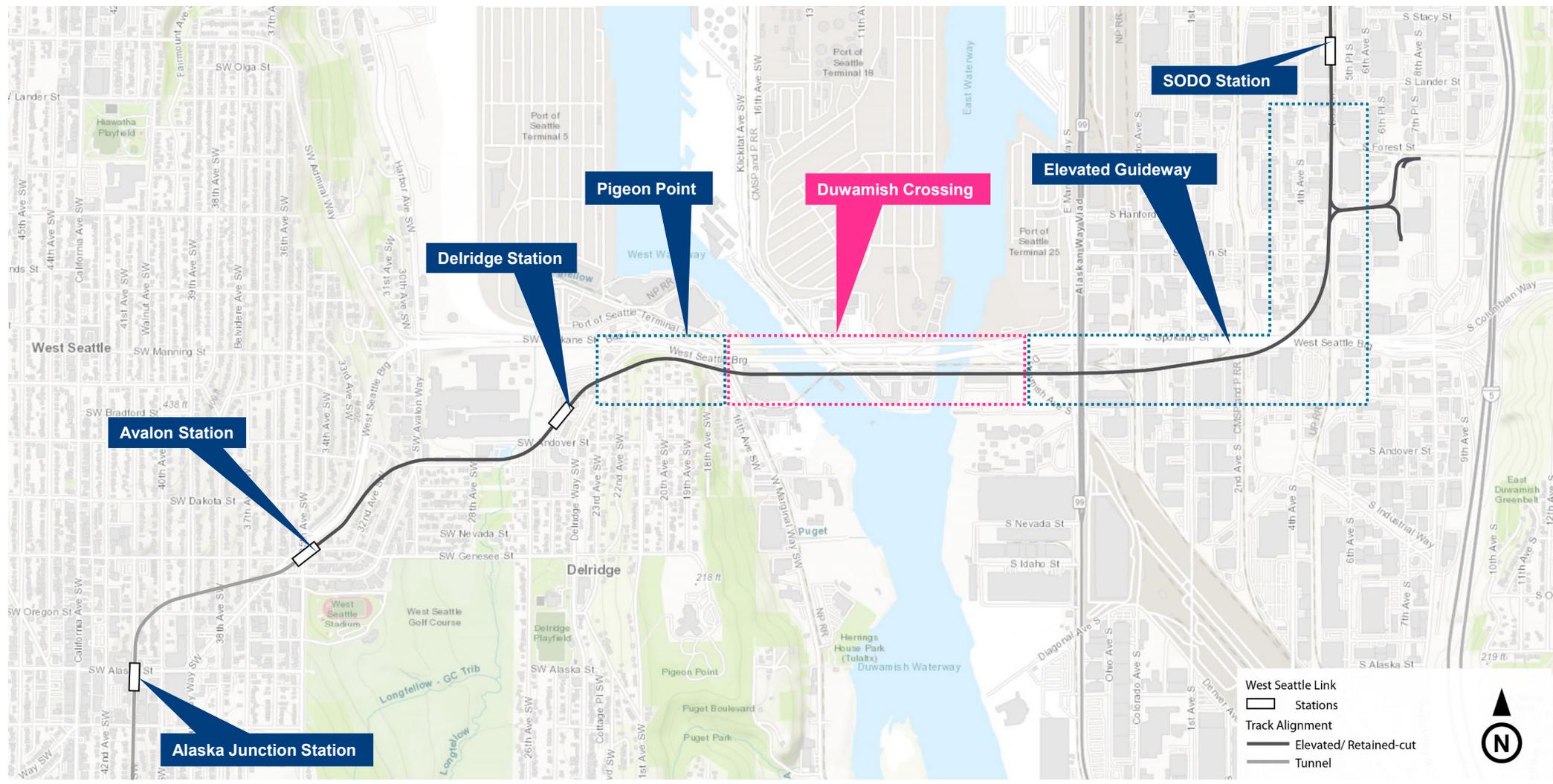
TRAIL CONNECTION SECTION C (STATION 263+00)





Q&A / Discussion

***PE Design Review:
Duwamish Crossing***



Engagement – Duwamish Crossing

- ***Briefings with Harbor Island Businesses, Port of Seattle Tenants, Port of Seattle and NWSPA***
- ***One-on-One Meetings with Businesses and Property Owners***
- ***Waterway User Survey (2020), Conducted a survey targeting maritime facilities and vessels.***
- ***Coordination with US Coast Guard for Clearances***
- ***Coordination with Tribes on in-water vs. clear span options***

Concept Evolution

Today



Context



Context



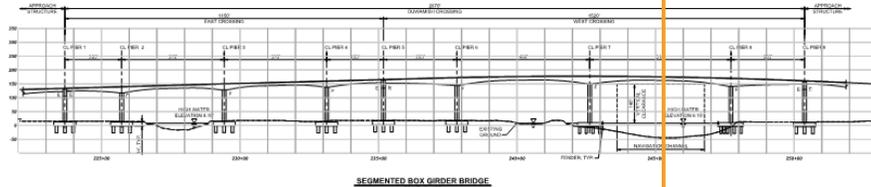
Crossing Development

- 1. Phase 1 - Multiple alignments and multiple bridge types***
- 2. Phase 2 - Focused on the preferred alignment (south) and four bridge types – Segmental Box Girder, Hybrid Extradosed, Steel Continuous Truss, and Cable-Stayed***
- 3. Phase 3 - Board confirmed the South Crossing as Preferred Alternative on July 28, 2022***
 - For Preferred Alternative, Sound Transit decided to limit consideration to bridges with no permanent in-water piers, following comments received on Draft EIS and workshops with interagency partners***
 - Sound Transit conducted Internal Evaluation on November 18, 2022***

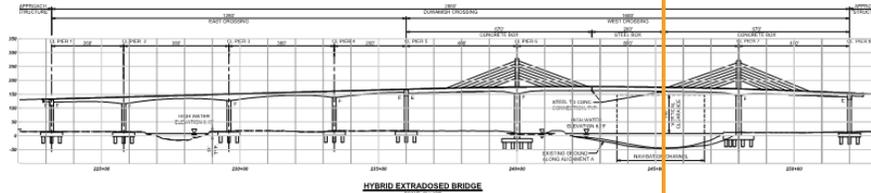
Phase 2 Bridge Alternatives

CL of Navigation Channel

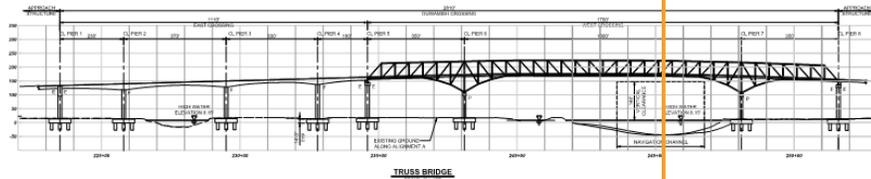
Segmental Box Girder



Hybrid Extradosed

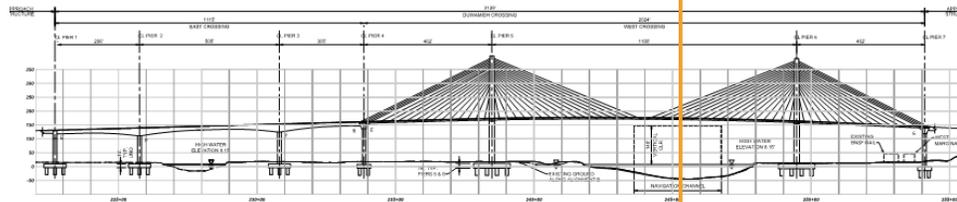


Steel Truss



Selected for PE

Cable-Stayed

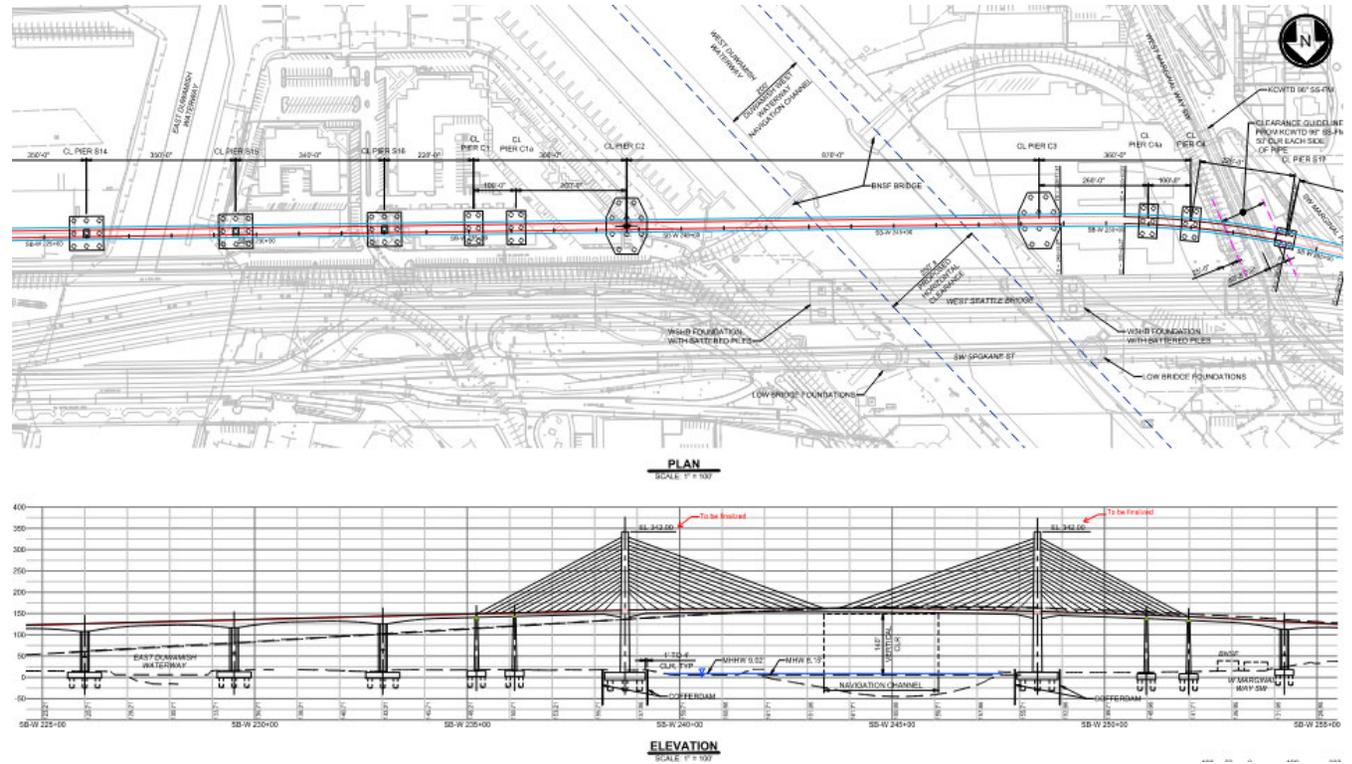


Cable-Stayed

- 1690' long bridge
- 360' - 970' - 360' span layout
- No in-water piers
- 12' diameter x 250' max deep shaft at main towers
- New type of bridge for ST



Skybridge, Surrey BC



Crossing Concept

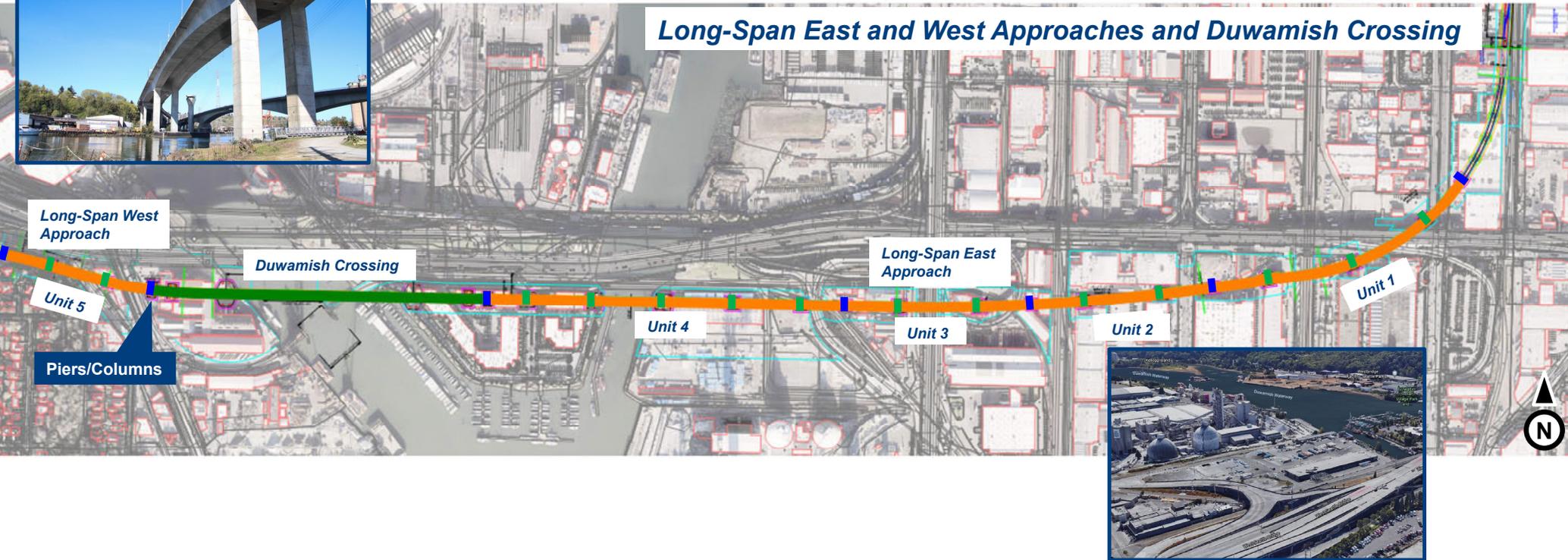


PE Concept Design

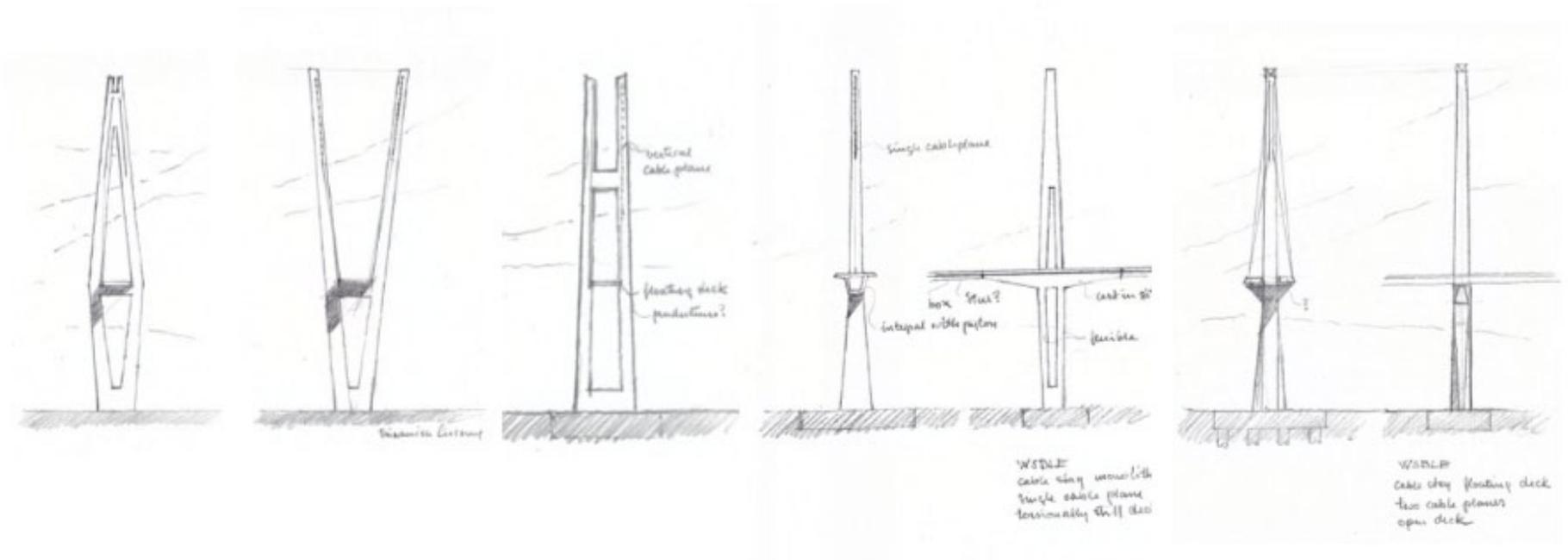
PE Concept Plan and Column Layout



Long-Span East and West Approaches and Duwamish Crossing



Early Bridge Studies – Cable Stayed



DIAMOND-PYLON

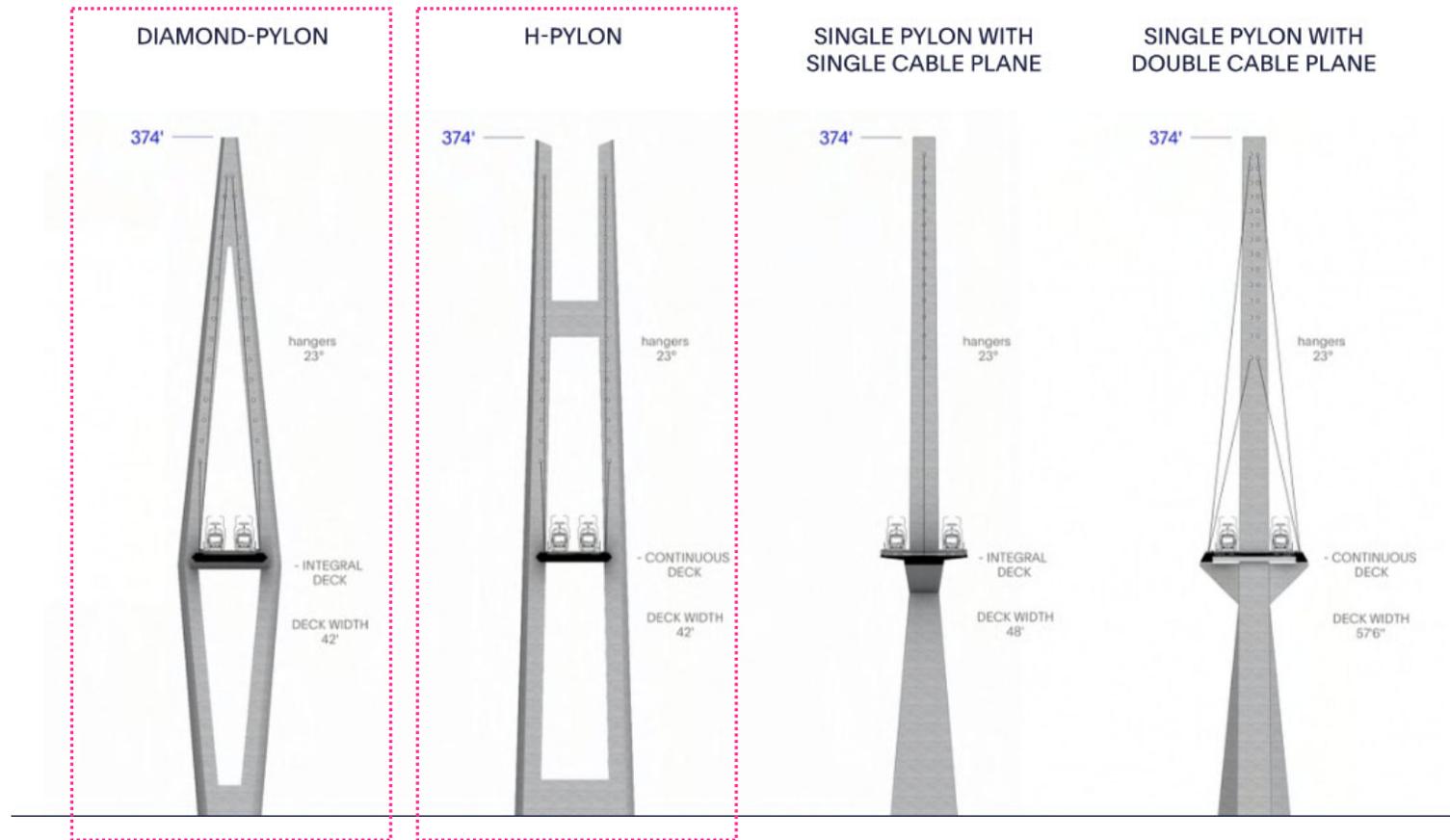
V-PYLON

H-PYLON

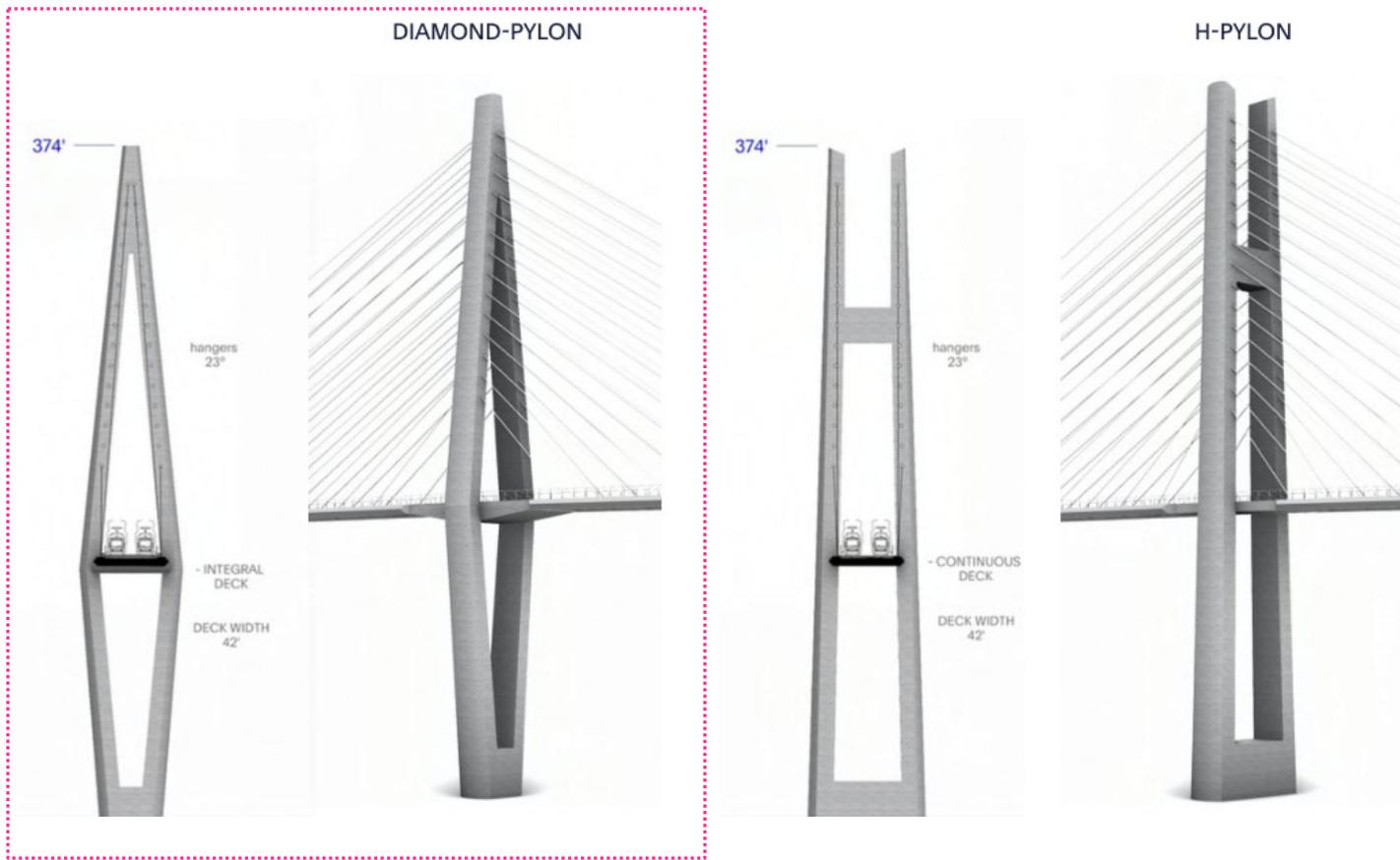
SINGLE PYLON WITH SINGLE CABLE PLANE

SINGLE PYLON WITH DOUBLE CABLE PLANE

Early Bridge Studies – Pylon Options



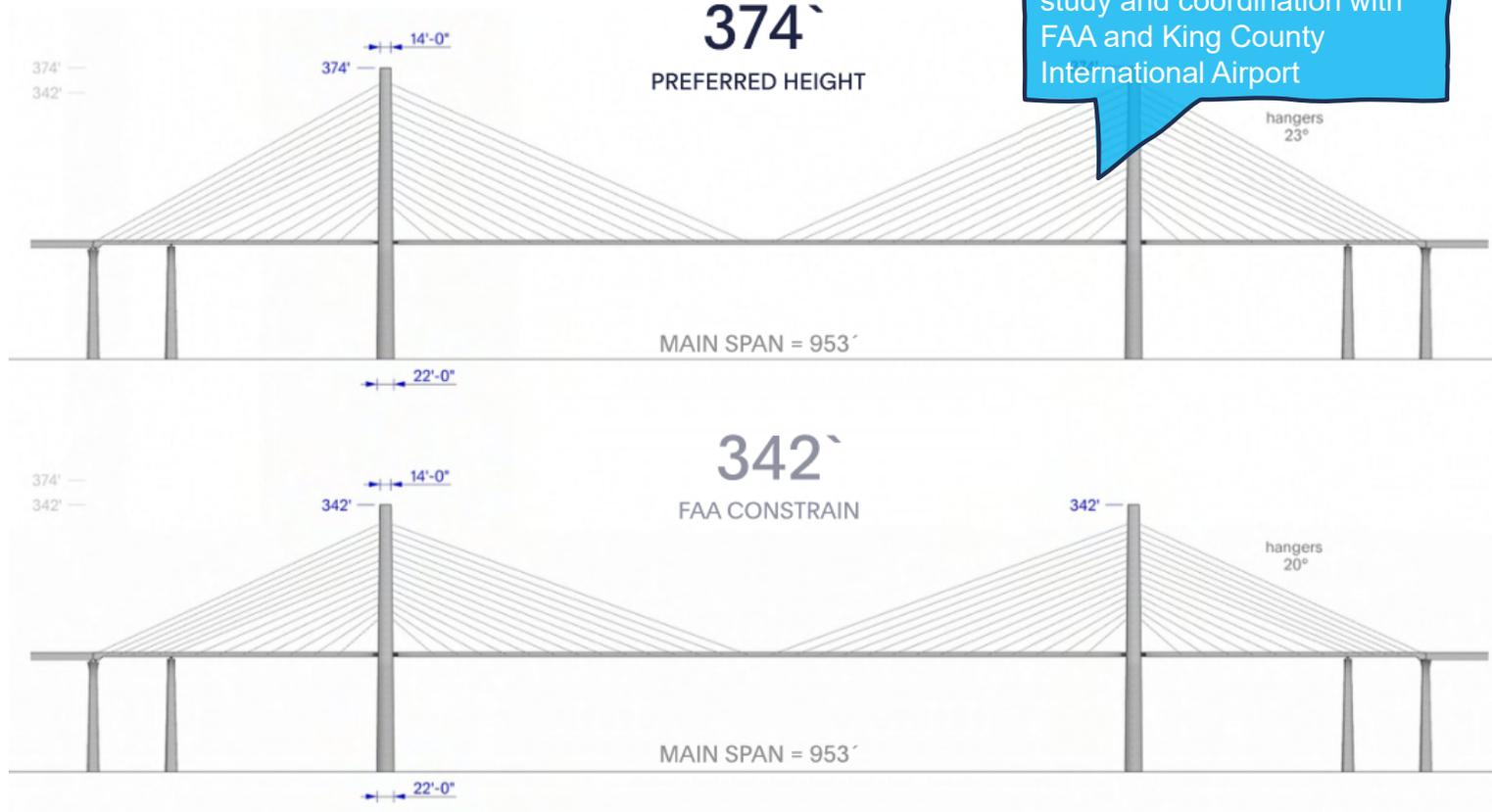
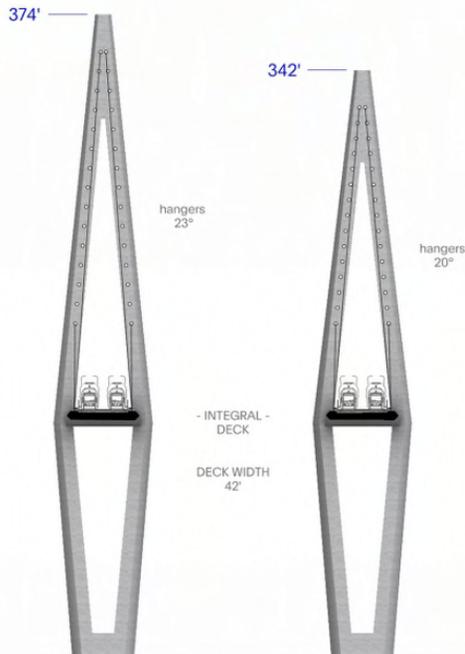
Final Pylon Options



Pylon Height Study

Taller pylon selected for aesthetics after airspace study and coordination with FAA and King County International Airport

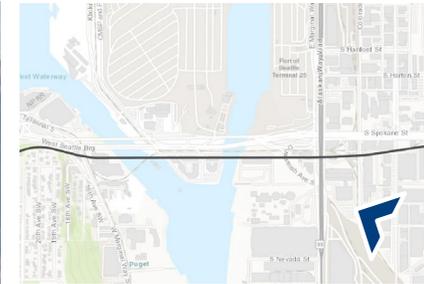
DIAMOND-PYLON



374'
PREFERRED HEIGHT

342'
FAA CONSTRAIN

Diamond Pylon



Key Plan

Diamond Pylon



Key Plan

From Harbor Island
looking Northwest

Diamond Pylon



Key Plan

*From Harbor Island
looking Northwest*

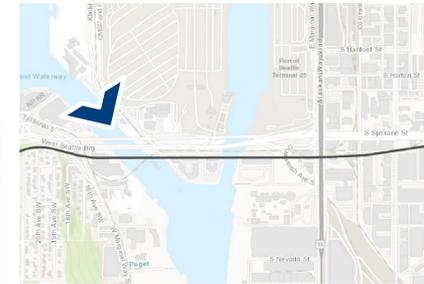
Diamond Pylon



Key Plan

From Duwamish
looking North

Diamond Pylon

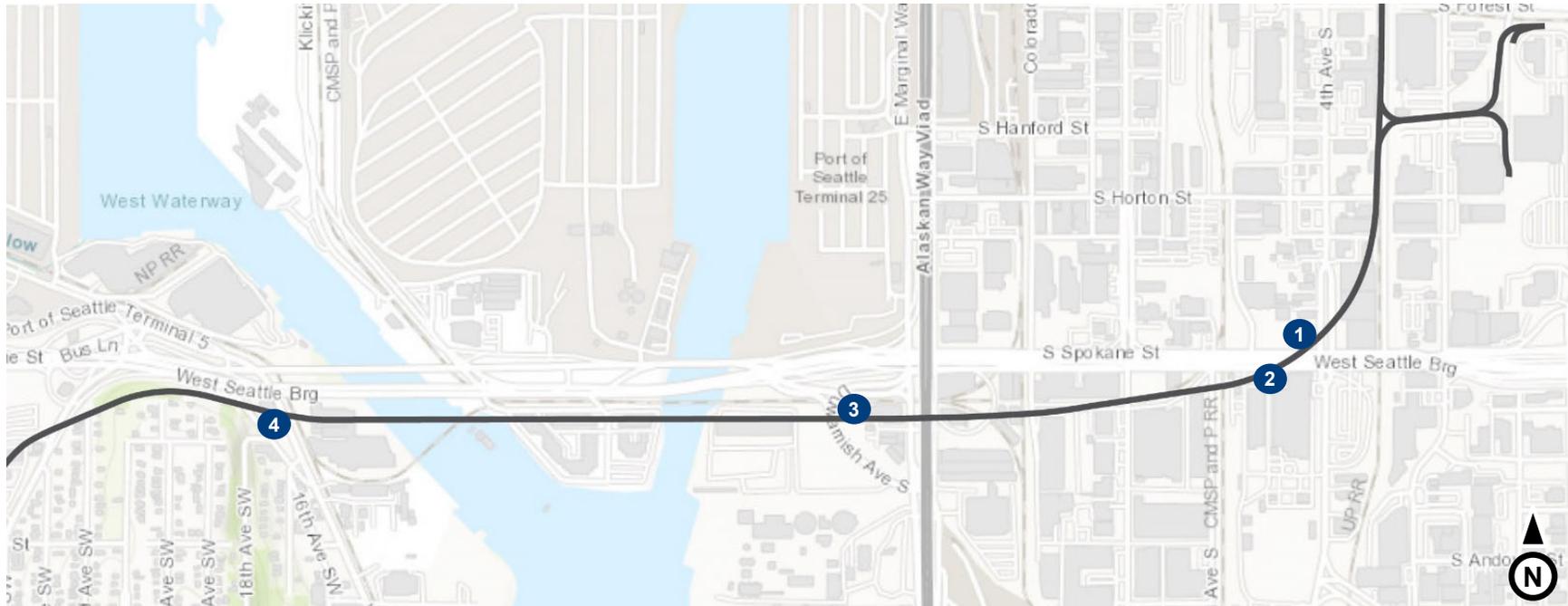


Key Plan

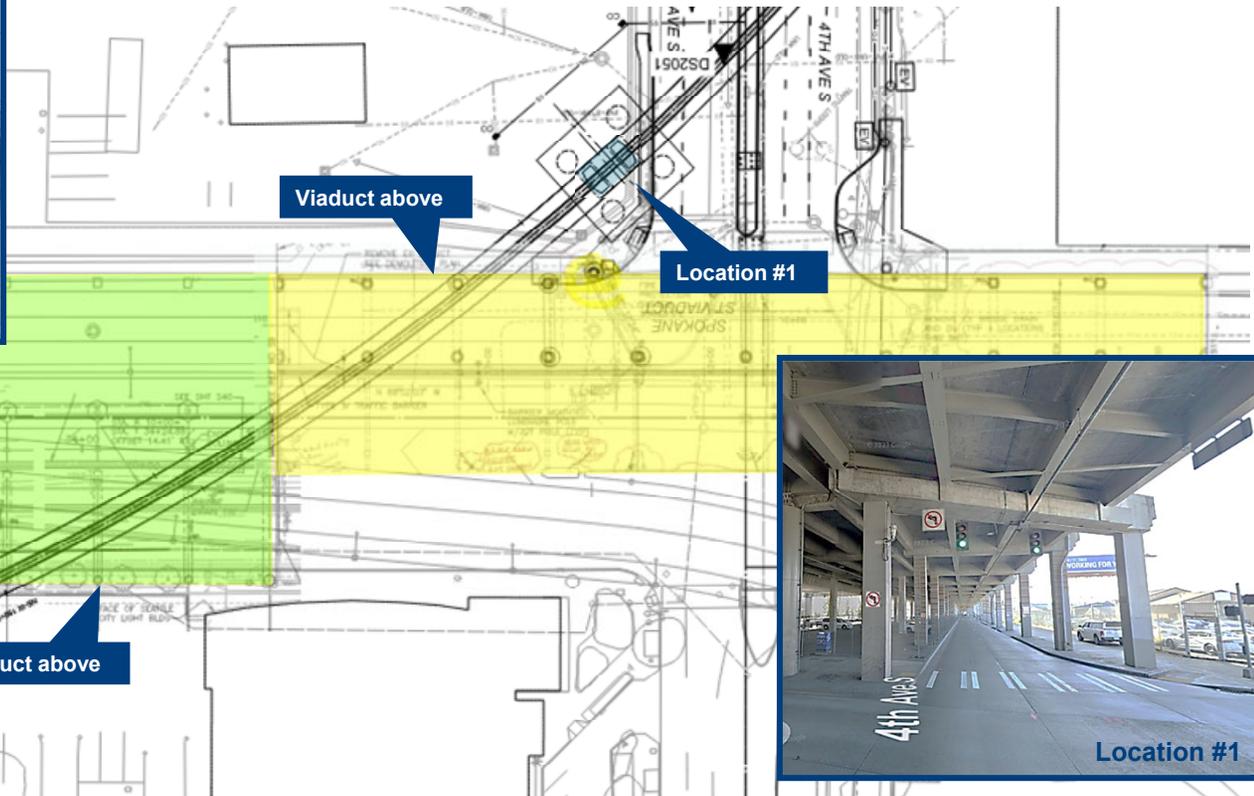
Aerial looking South

PE Concept Design
WSHB Proximity Analysis

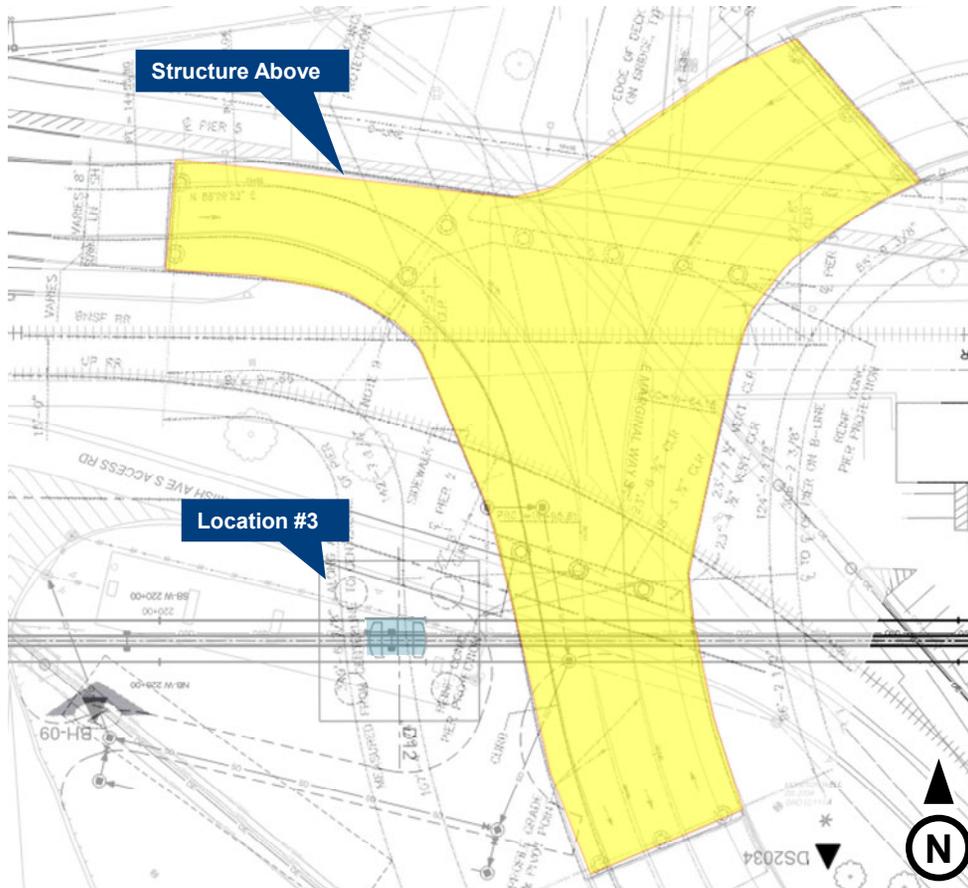
Structural Proximity Analysis



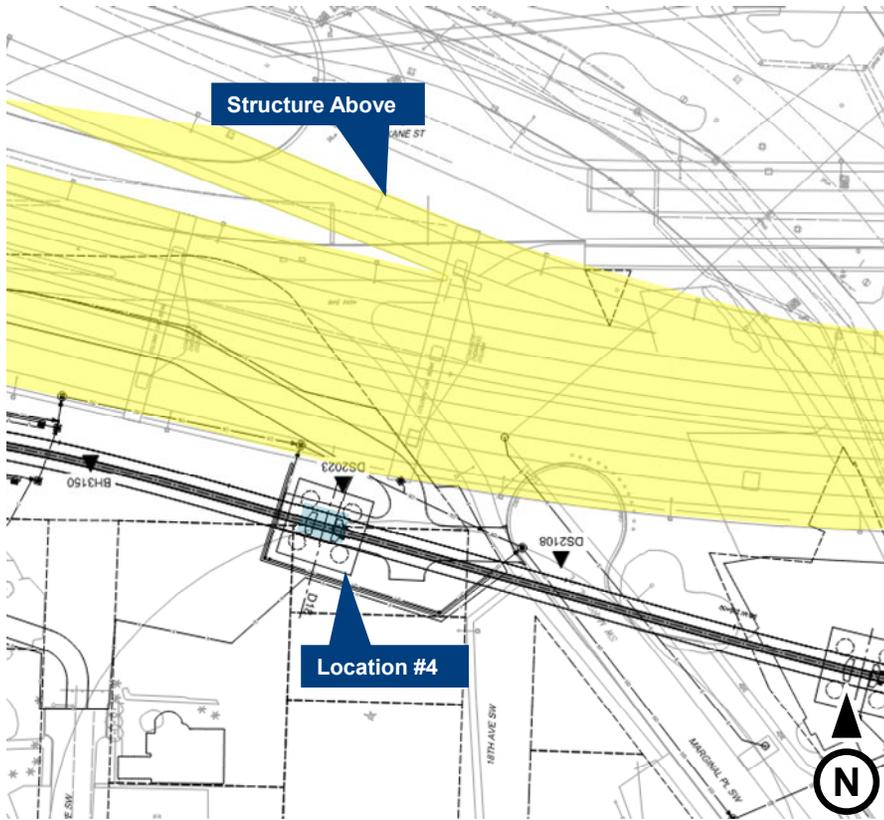
Structural Proximity Analysis



Structural Proximity Analysis



Structural Proximity Analysis



Q&A / Discussion

Thank you.



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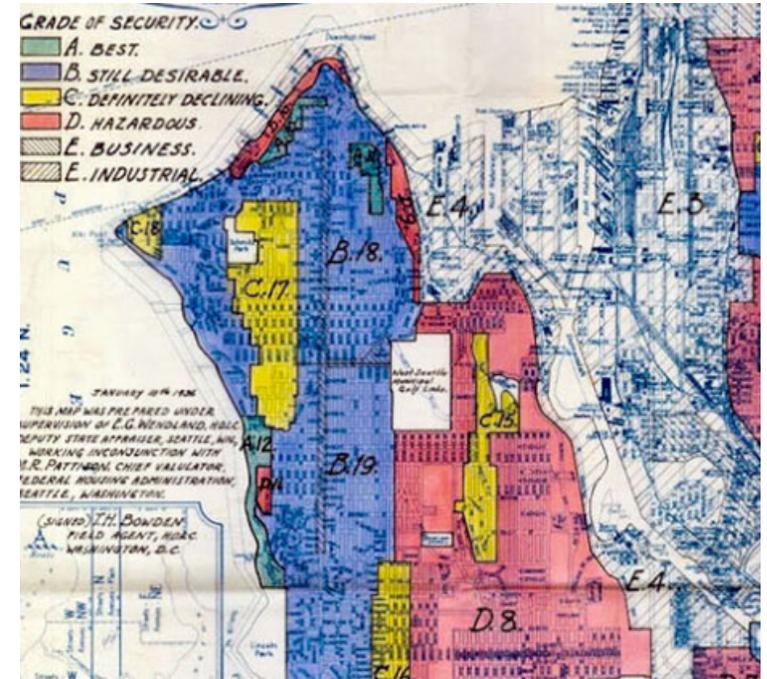


History of Disadvantage



Historic Flour Mill

Pigeon Point named for the pigeons that flocked to the area to eat the flour
Image Source: SW Seattle Historical Society - Log House Museum



Historic Commercial Map of Seattle - 1936

Image Source: History Link – Redlining in Seattle

Waterway History

