



West Seattle and Ballard Link Extensions

Interbay-Ballard
Further Studies Workshop #2

January 11, 2023

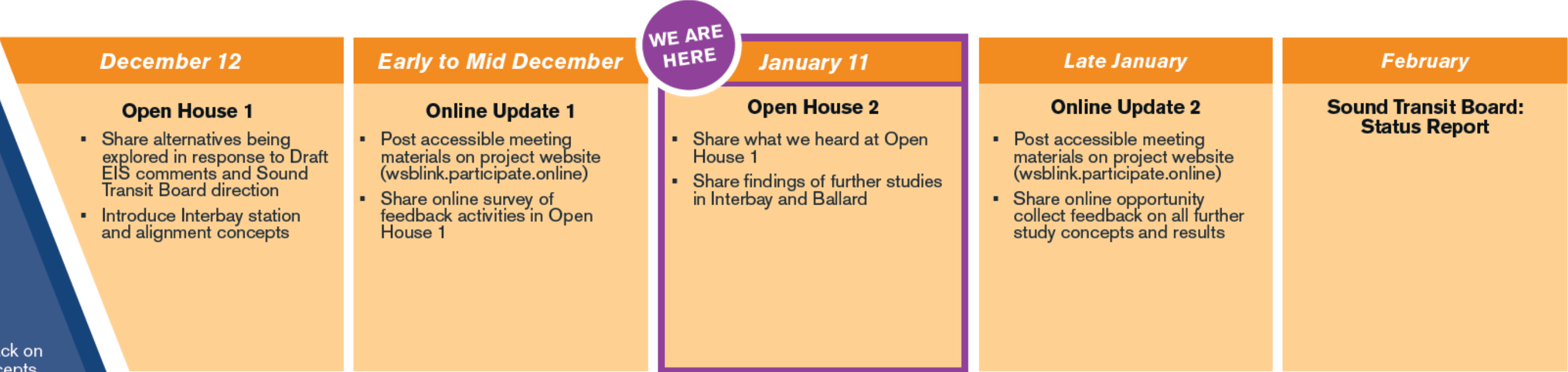
Interbay-Ballard Further Studies Background

Interbay-Ballard Further Study & Engagement

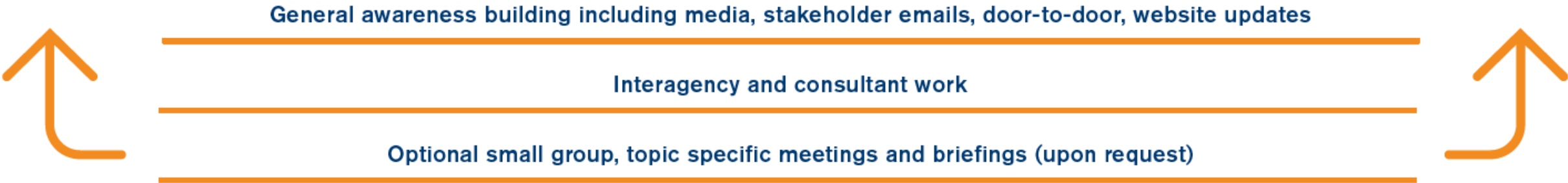
GOALS

- **Update** on the status of the Ballard Link Extension project and ongoing further studies
- **Share** alternative concepts for alignments and stations in the Interbay-Ballard segment that Sound Transit team is exploring as requested by the Board in response to Draft EIS comments
- **Gather** community feedback on station and alignment concepts

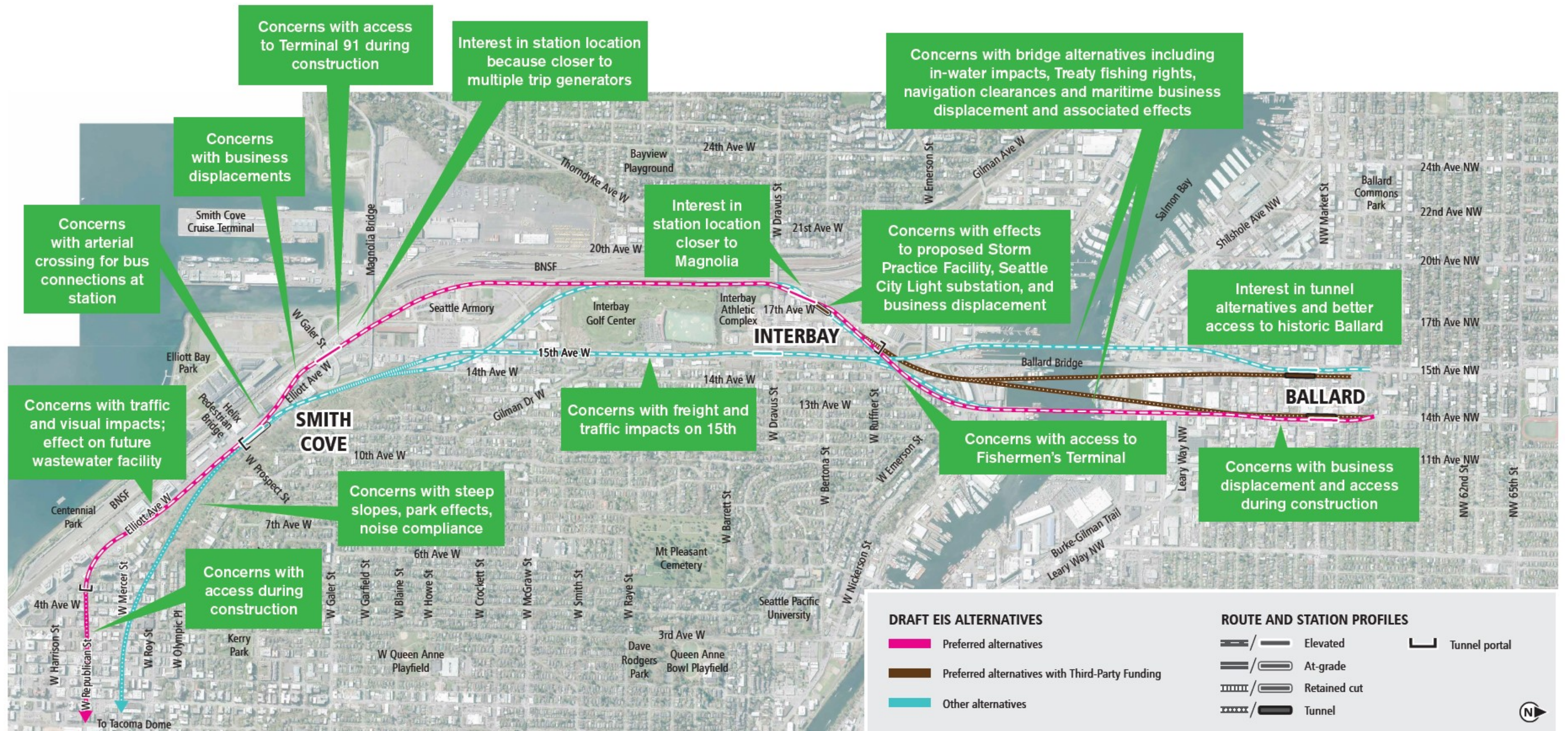
TIMELINE FOR FURTHER STUDIES



SUPPORTING THE WORK

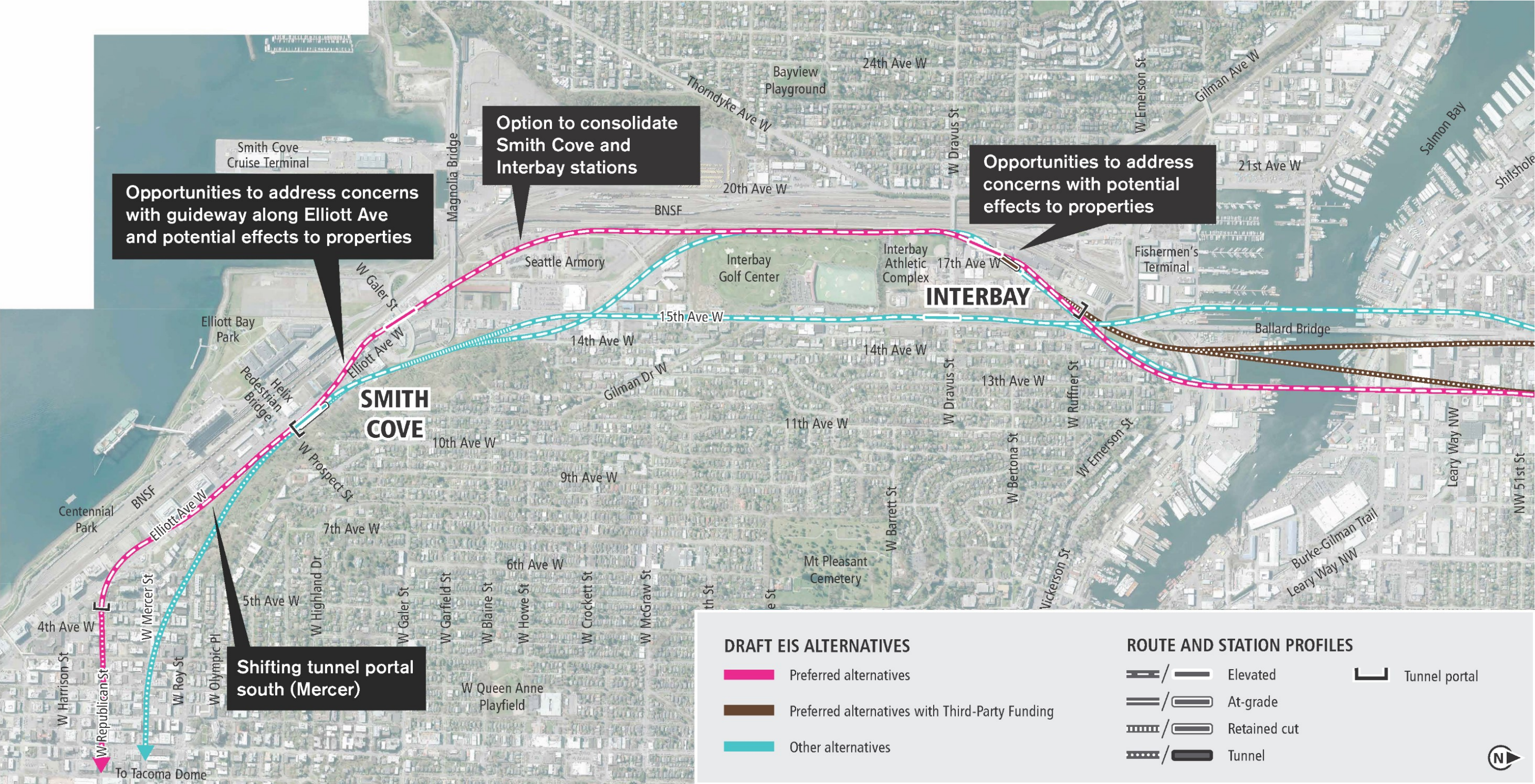


South Interbay and Interbay-Ballard: Snapshot of Draft EIS Comments



Interbay Further Studies

Interbay – Further Studies



What we heard from you about Interbay further study concepts

(includes feedback shared at Dec 12, 2022 open house and companion online survey)



A Modified SIB-1 Alignment

Republican portal + Smith Cove Station (SIB-1) + Refined Interbay Station

- Interest in maintaining two stations in this part of the alignment to enhance access and future development opportunities.
- Concerns about multiple track crossings over Elliott Ave W and the associated challenges for traffic and pedestrians without other improvements.
- Support for a station at the W Galer St Flyover because of good location, accessibility, and multimodal connection opportunities.
- Support for the pedestrian and bike connections the Shifted Interbay Station could provide, and interest in associated pedestrian, transit, and roadway improvements on W Dravus St.

B Modified SIB-3 Alignment

Mercer Pl portal + Shifted Smith Cove Station + Refined Interbay Station

- Concern that a Shifted Smith Cove Station could potentially make access to the cruise terminal and key locations along Elliott Ave W more difficult.
- Support for transit connection opportunities that a Shifted Smith Cove station could provide.
- Interest in understanding what development could be possible around a future station at the Armory Site.
- Support for transit connections and Transit Oriented Development opportunities the Shifted Interbay Station could provide.

C Consolidated Alignment

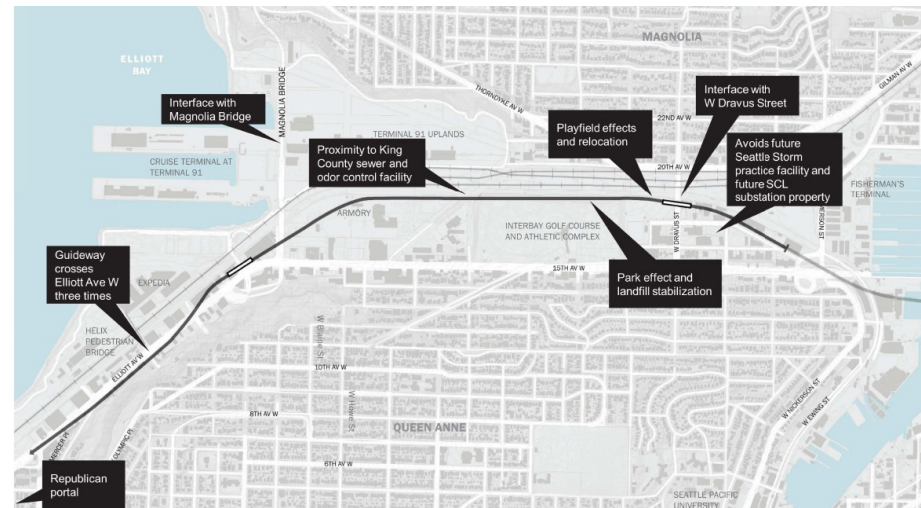
Blaine portal + Consolidated Interbay-Smith Cove Station

- Concern that a single station could limit opportunities for connections to surrounding neighborhoods and key locations as well as Transit Oriented Development along the corridor.
- Support for fewer property and business impacts in Interbay associated with a consolidated station.
- Interest in the pedestrian, transit, and freight improvement opportunities on 15th Ave W associated with the alignment.
- Interest in potential redevelopment opportunities associated with the tunneled alignment.

Diagrams show an approximate representation of alignment, station location, and access concepts for illustrative purposes only. Not approved by any party.

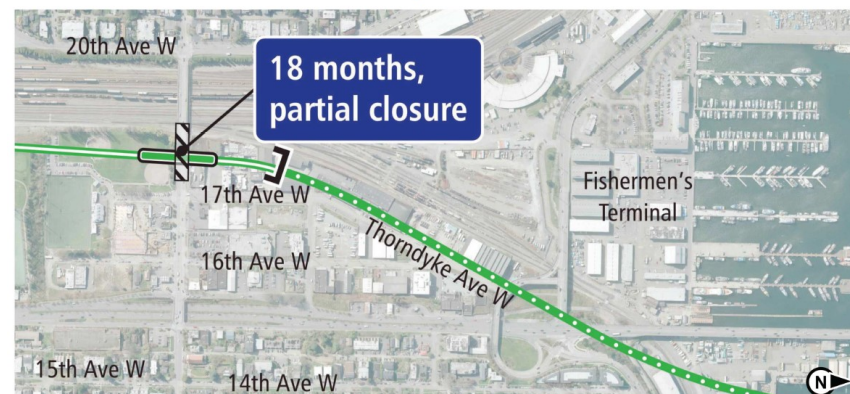
Smith Cove/Interbay – Technical Findings

Modified SIB-1: Shifted Alignment (Dravus Bridge)



Concept Plan

Traffic & Construction Implications

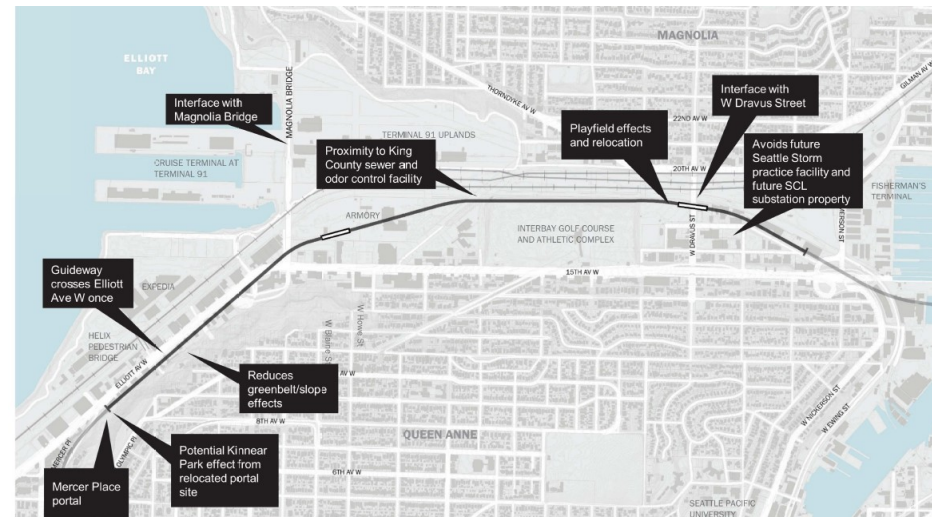


To construct the station under Dravus Street, it is anticipated that a partial closure of W Dravus Street will be needed. This closure is anticipated to maintain at least one lane in each direction for approximately 18 months. This could periodically be reduced to one lane during that period.

Approximate Cost Savings: \$30 million

Cost in 2019\$ (compared to Galer Street Station/Central Interbay, SIB-1, and Tunnel 14th Avenue, IBB-2a)

Modified SIB-3: Mercer PI Portal



Concept Plan

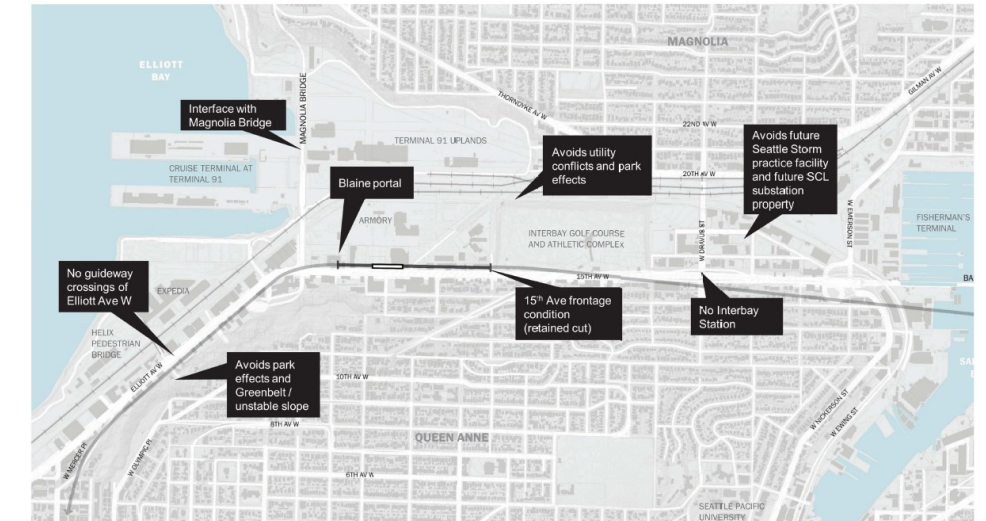
Queen Anne Hillside



Through additional geotechnical investigation, geotechnical analysis and conceptual design work, the Sound Transit team has determined that the Mercer Place location is not suitable for a tunnel portal. This concept would result in substantial constructability challenges, cost, disruption to the park and hillside/greenbelt, as well as challenges related to the permitting of the portal and guideway concept.

The initial assumption for both the Modified SIB-3 concept and the Draft EIS Prospect Street Station/Central Interbay Alternative (SIB-3) was a connection to a Seattle Center Station on Mercer Street (6th Avenue/Mercer Street Alternative (DT-2) in the Downtown segment). It should be noted that it is potentially feasible to connect the shifted Smith Cove Station north of Magnolia Bridge to the Republican portal with elevated guideway. This would result in a connection to a Seattle Center Station on Republican Street instead of Mercer Street. This and other implications of this connection would require additional study.

Consolidated Station (Ground Improvements)



Concept Plan

Traffic & Construction Implications



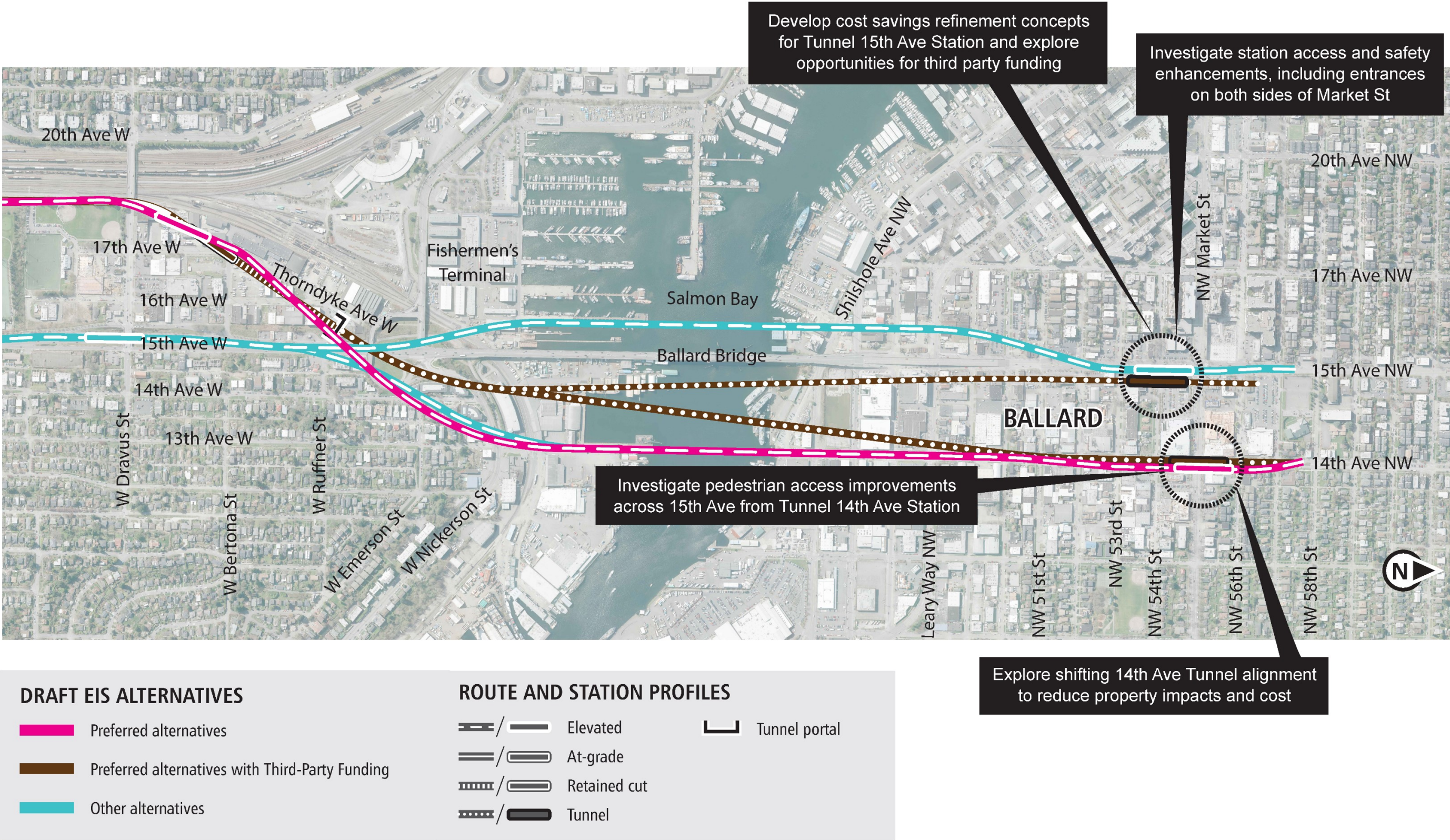
Due to suspected existing timber piles and other challenging ground conditions in Elliott Avenue W, a series of ground improvements is recommended in advance of tunneling beneath the roadways to reach the consolidated station location. These ground improvements would require closure of traffic lanes on 15th Avenue W for periods of time, phased across three and a half years, due to necessary utility relocation and excavation of existing ground which would then be replaced with more suitable material to tunnel through.

Approximate Additional Cost: \$210 million

Cost in 2019\$ (compared to Galer Street Station/Central Interbay, SIB-1, and Elevated 14th Avenue, IBB-1a)

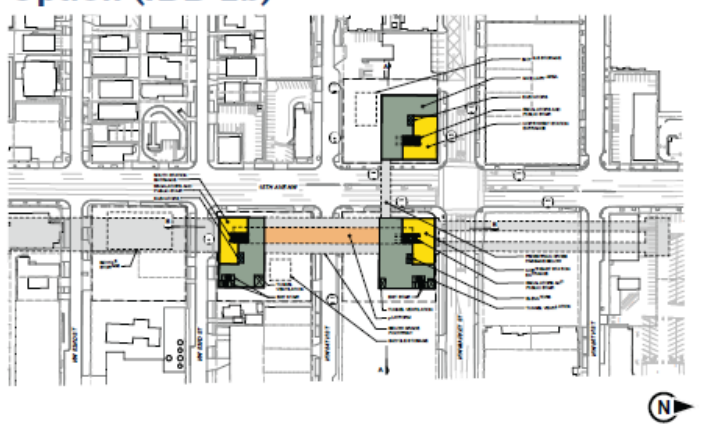
Ballard
Further Studies

Ballard Station – Further Studies

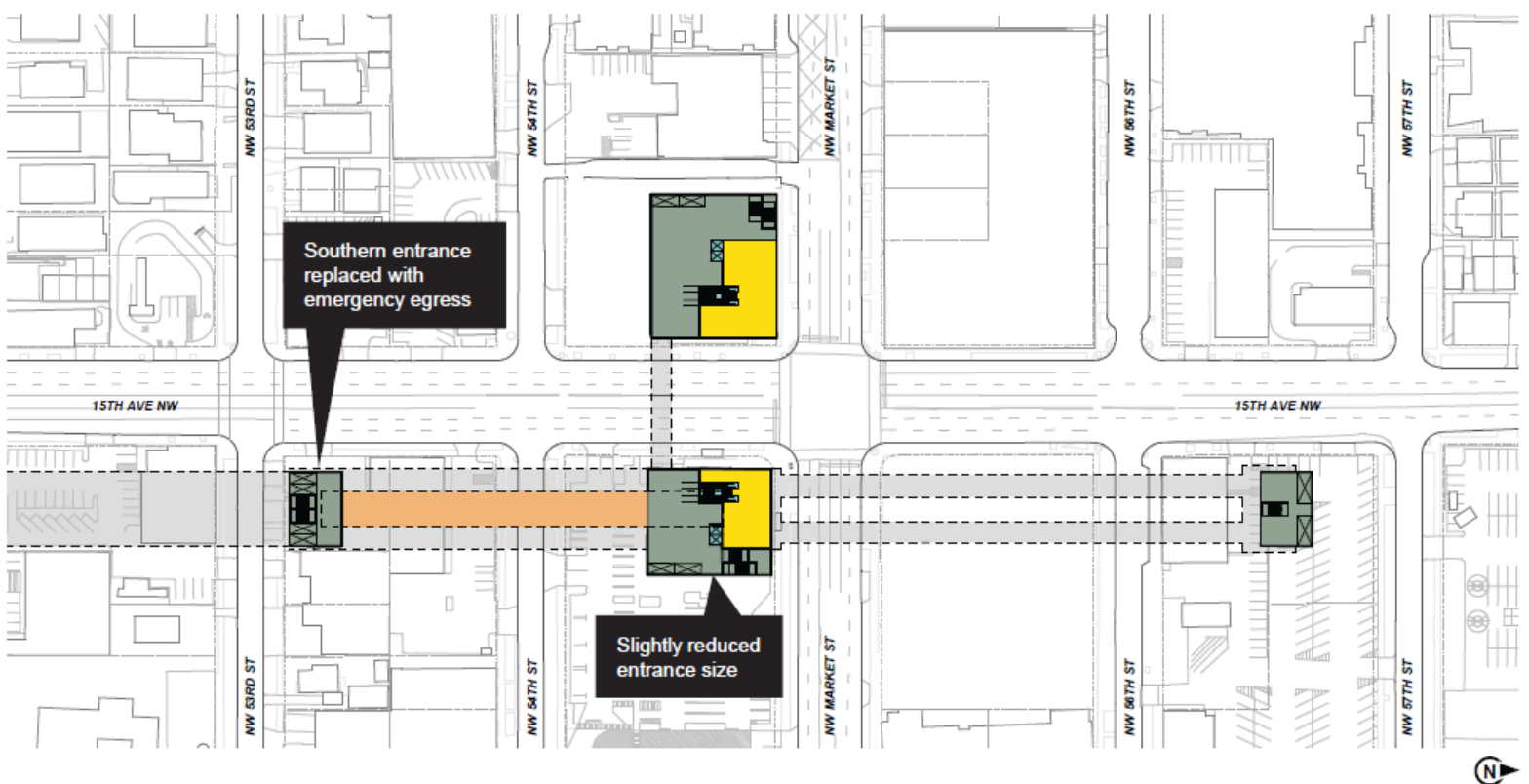


Ballard Tunnel 15th Cost Savings Refined Draft EIS Concept

Draft EIS Tunnel 15th Avenue Station
Option (IBB-2b)



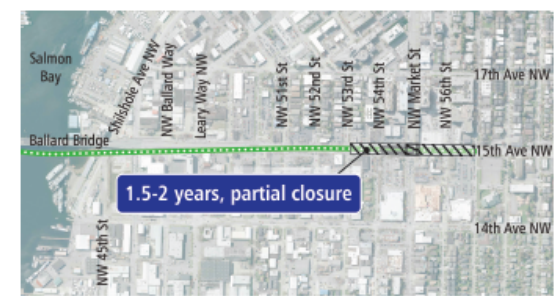
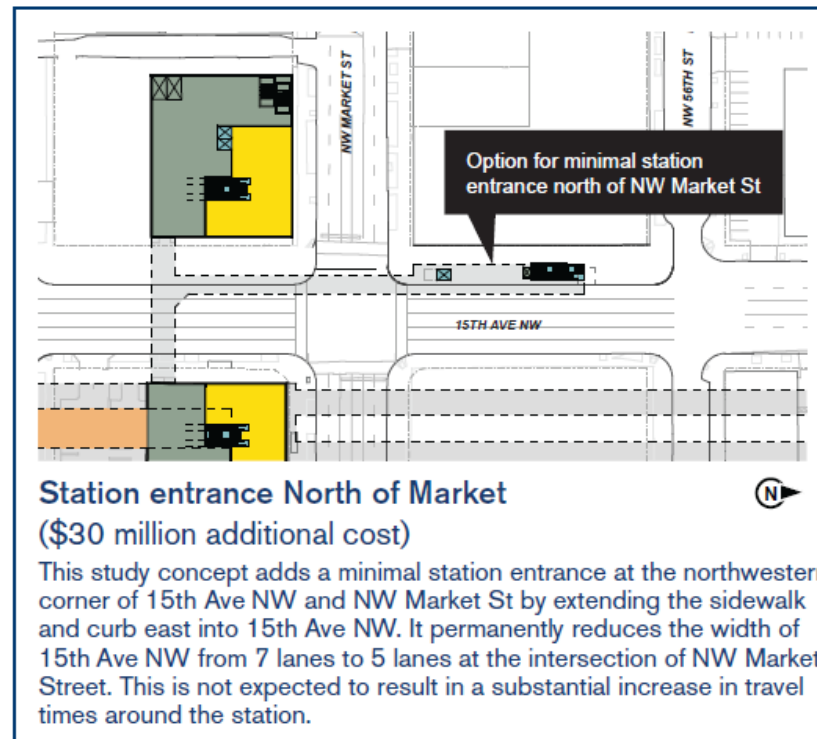
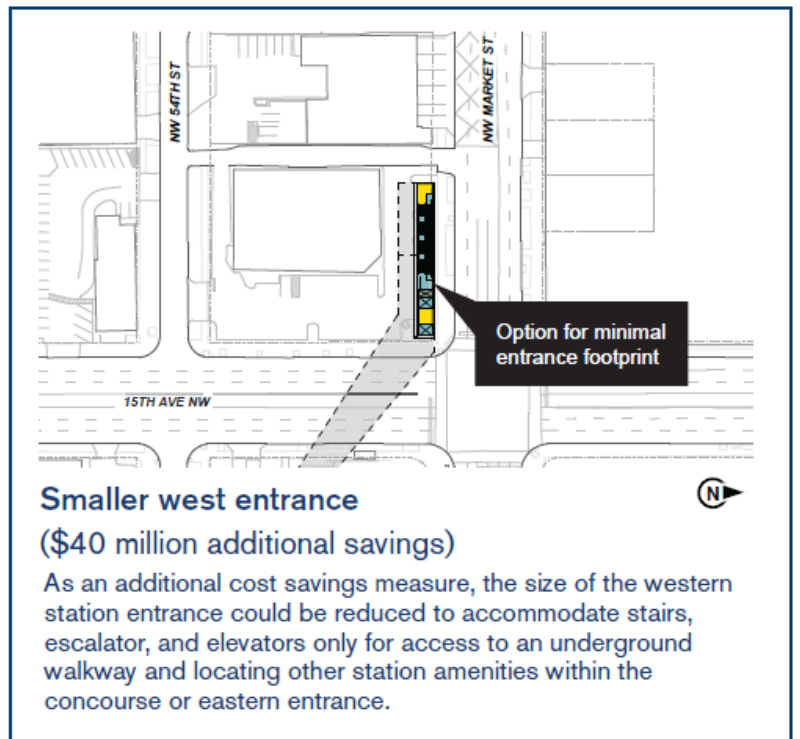
Refined Draft DEIS Concept



Sound Transit has developed a refined version of the Draft EIS Tunnel 15th Avenue Station Option (IBB-2b) station location, replacing the southern entrance with emergency egress only and slightly reducing the size of the eastern entrance at 15th Ave NW/NW Market St. The Draft EIS Tunnel 15th Avenue Station Option (IBB-2b) is shown on the left for comparison. Access options that could be combined with the refined Draft EIS concept are shown below.

Approximate Cost Savings: \$100 million
Cost in 2019\$ (compared to Tunnel 15th Avenue Station Option, IBB-2b)

Additional Access Options



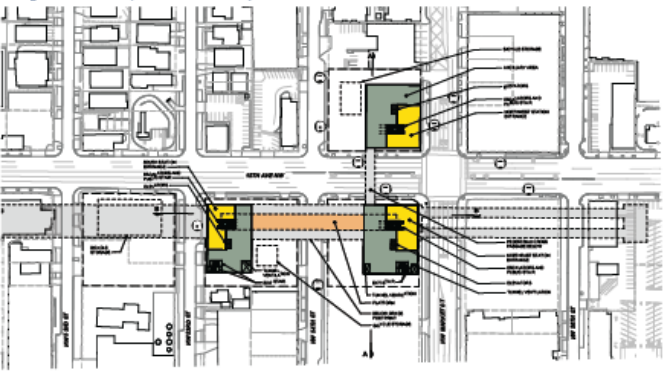
Traffic & Construction Implications

The additional north entrance is estimated to require a temporary partial closure of all but three lanes of 15th Ave NW between NW 57th St and NW 53rd St during construction for 18 to 24 months. Additional phased partial closures of the 15th Ave NW and NW Market St intersection would be needed.

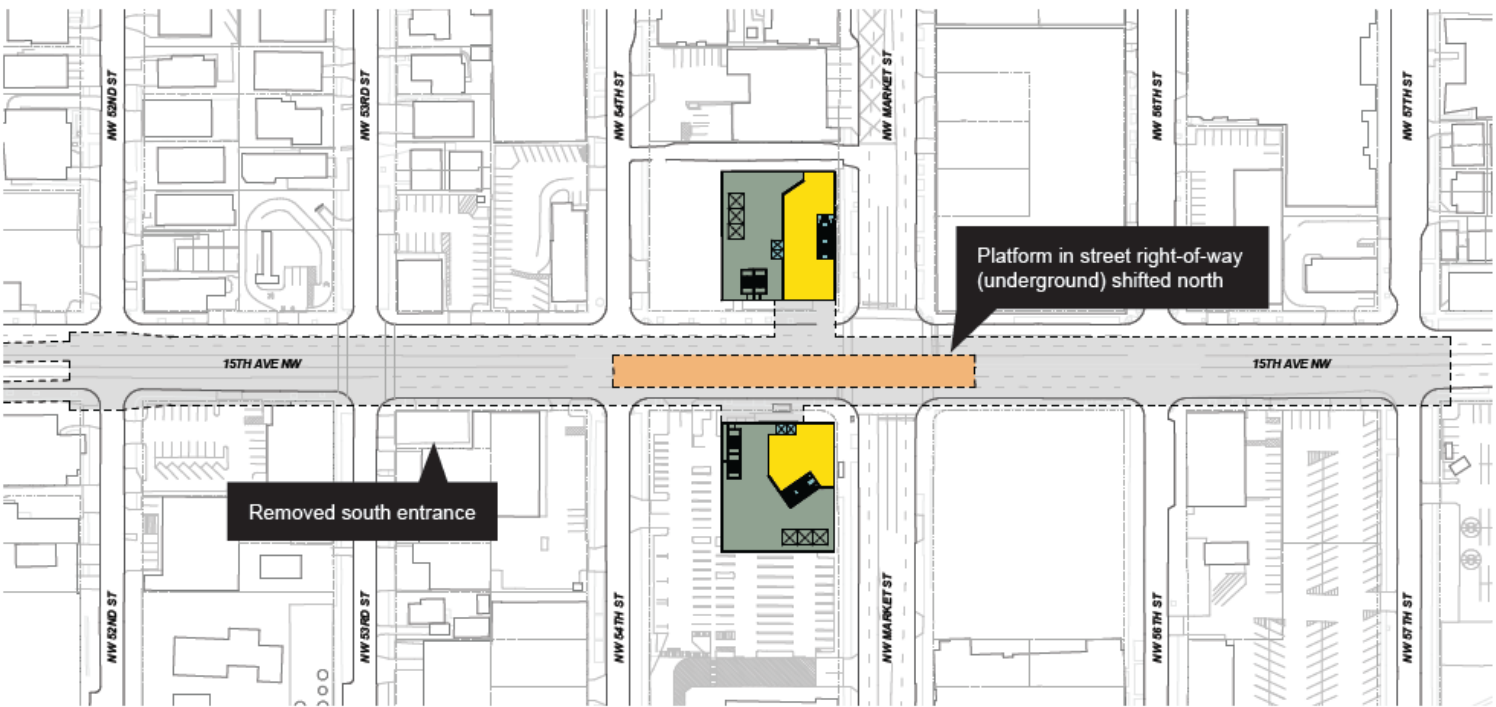
Note: The physical limits of street closures, as well as durations, are approximate and subject to change based on the final design and construction planning.

Ballard Tunnel 15th Cost Savings Station Shifted into Right-of-Way

Draft EIS Tunnel 15th Avenue Station
Option (IBB-2b)



Station shifted into Right-of-Way



Sound Transit has developed a refined version of the Draft EIS Tunnel 15th Avenue Station Option (IBB-2b) station location, which shifts the tunnel alignment and station into the 15th Ave NW street right-of-way (ROW). The Draft EIS Tunnel 15th Avenue Station Option (IBB-2b) is shown on the left for comparison. Access options that could be combined with the concept are shown below.

Approximate Cost Savings: \$100 million
Cost in 2019\$ (compared to Tunnel 15th Avenue Station Option, IBB-2b)

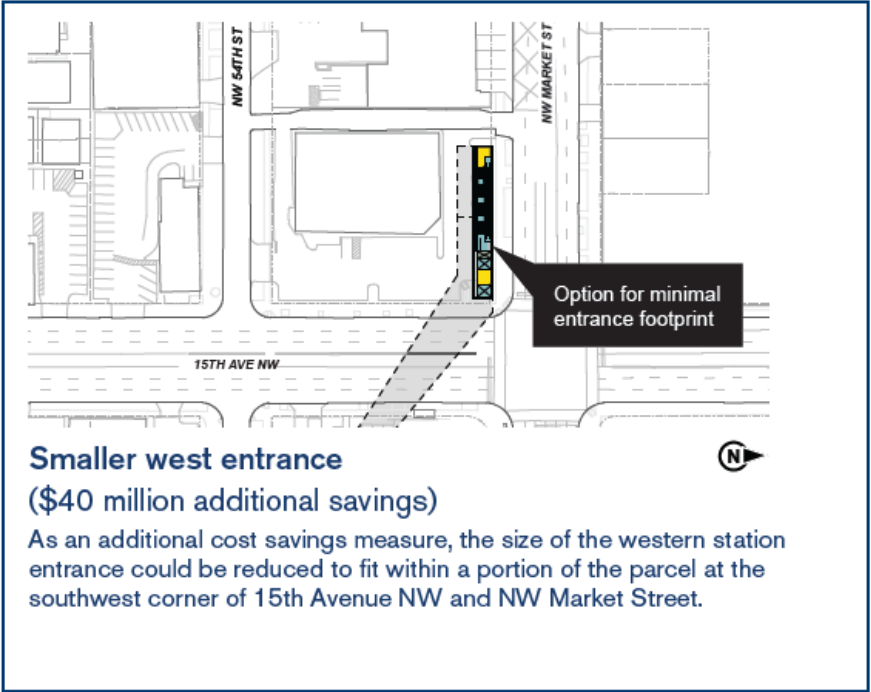
Traffic & Construction Implications



Shifting the station box into the 15th Avenue NW ROW is estimated to require a temporary partial closure of all but three lanes of 15th Avenue NW between NW 53rd St and NW 57th St for up to 48 months. Additionally, there would be phased partial closures of the intersection of 15th Avenue NW and NW Market Street.

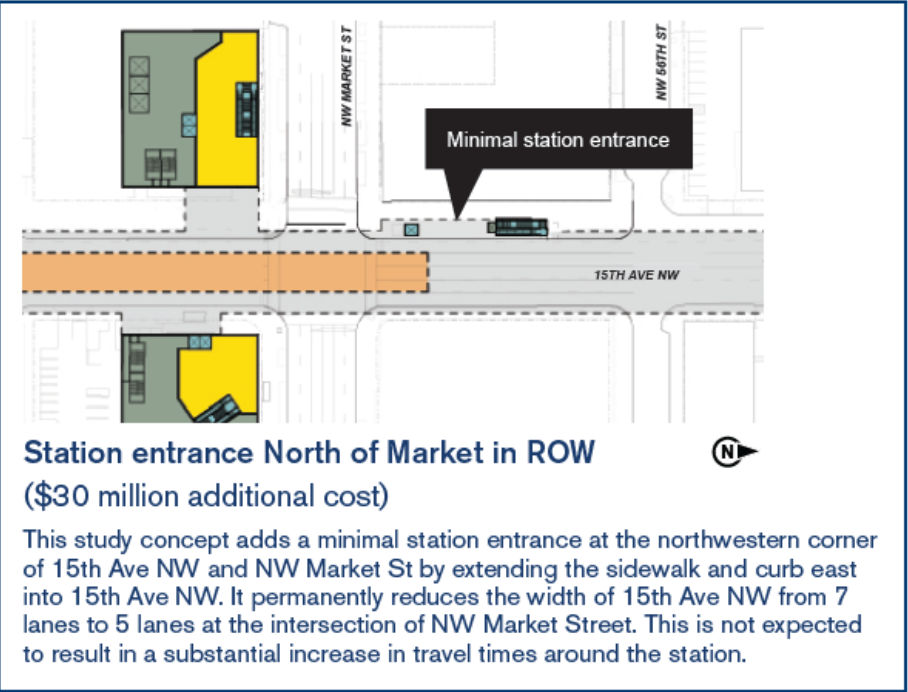
Note: The physical limits of street closures, as well as durations, are approximate and subject to change based on the final design and construction planning.

Additional Access Options



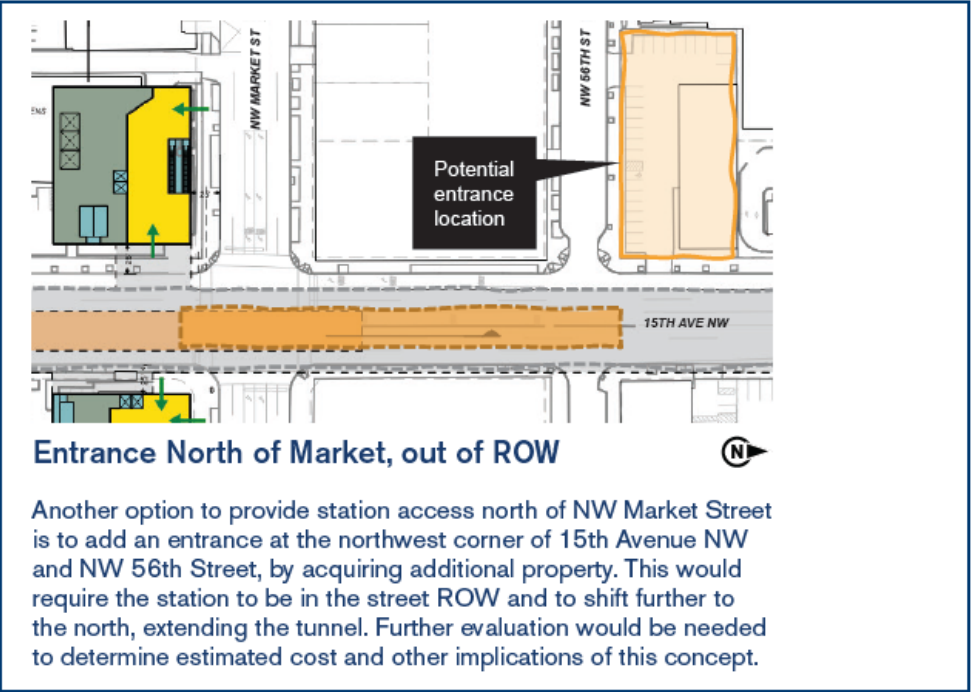
Smaller west entrance
(\$40 million additional savings)

As an additional cost savings measure, the size of the western station entrance could be reduced to fit within a portion of the parcel at the southwest corner of 15th Avenue NW and NW Market Street.



Station entrance North of Market in ROW
(\$30 million additional cost)

This study concept adds a minimal station entrance at the northwestern corner of 15th Ave NW and NW Market St by extending the sidewalk and curb east into 15th Ave NW. It permanently reduces the width of 15th Ave NW from 7 lanes to 5 lanes at the intersection of NW Market Street. This is not expected to result in a substantial increase in travel times around the station.

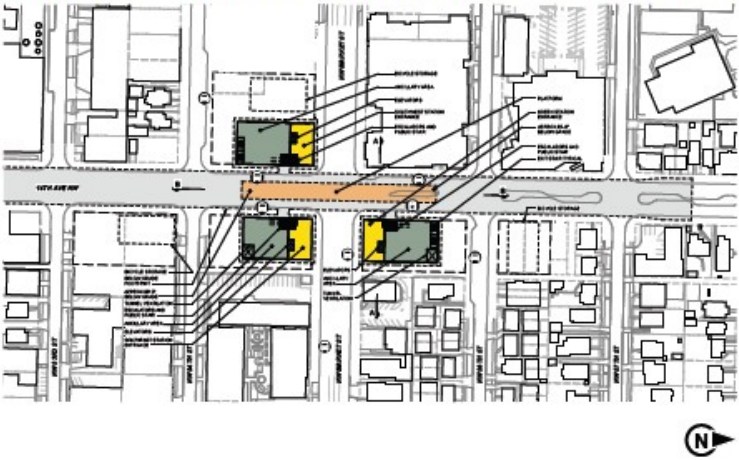


Entrance North of Market, out of ROW

Another option to provide station access north of NW Market Street is to add an entrance at the northwest corner of 15th Avenue NW and NW 56th Street, by acquiring additional property. This would require the station to be in the street ROW and to shift further to the north, extending the tunnel. Further evaluation would be needed to determine estimated cost and other implications of this concept.

Tunnel 14th Station Access Studies

Draft EIS Tunnel 14th Avenue Alternative (IBB-2a)



Inset Map



Sound Transit has developed a series of concepts that could improve access from west of 15th Avenue NW to the Draft EIS Tunnel 14th Avenue Alternative (IBB-2a) station location. The graphics depict a summary of the different concepts that could be implemented and implications for access, traffic, and cost.

At-Grade Pedestrian Approach and Crossing Improvements



PEDESTRIAN ACCESS IMPLICATIONS

- Longer waits** for crossing at 15th due to signal changes, but improved safety and directional choice
- Increase** in E/W walk time from intervention without reduced N/S green time

TRAFFIC IMPLICATIONS* & COST

- 1-2 minutes** Additional vehicle delay at 15th/Market Intersection
- \$0.5-1M**



PEDESTRIAN ACCESS IMPLICATIONS

- Easier** crossing at 15th with mid-street refuges, but not necessarily shorter distance to clear intersection
- 10-15 sec** improvement in walk time from intervention

TRAFFIC IMPLICATIONS* & COST

- 1-2 minutes** Additional vehicle delay at 15th/Market intersection
- \$0.5-1M**



PEDESTRIAN ACCESS IMPLICATIONS

- Shorter, easier** crossing at 15th from intervention, with larger waiting area and increased visibility
- 3 sec** Improvement in walk time from intervention

TRAFFIC IMPLICATIONS* & COST

- <1 minute** Additional vehicle delay at 15th/Market intersection
- <\$0.5M**

15th & Market: Pedestrian Scramble

15th & Market: Crossing Islands

15th & Market: Curb Bulbs



PEDESTRIAN ACCESS IMPLICATIONS

- More active** frontages provide services and destinations "on the way" to transit
- Placemaking** opportunities with planting, public art, and paving

TRAFFIC IMPLICATIONS* & COST

- No change** Assumes no changes to intersection cross section or operations
- <\$0.5M** Requires partner



PEDESTRIAN ACCESS IMPLICATIONS

- Shorter, easier** crossing at 15th with upgrades for facilities for all users. Minimizes auto and pedestrian conflicts
- More direct** potential walking route to historic Ballard Ave district

TRAFFIC IMPLICATIONS* & COST

- NB BAT Lane** eliminated at intersection
- <\$0.5M**

NW Market St Streetscape Improvements

NW 53rd St: Crossing Improvements

Grade Separated Pedestrian Crossing Improvements



PEDESTRIAN ACCESS IMPLICATIONS

- Less convenient** but improved traffic safety compared to crossing at-grade
- 40 sec** additional travel time due to extra vertical circulation

TRAFFIC IMPLICATIONS* & COST

- Intersection visibility** could be reduced by structure mass
- \$20-40M**



PEDESTRIAN ACCESS IMPLICATIONS

- Less convenient** but improved traffic safety compared to crossing at-grade
- 40 sec** additional travel time due to extra vertical circulation

TRAFFIC IMPLICATIONS* & COST

- No change** Assumes no changes to intersection cross section or operations
- \$40-60M** + long term O&M



PEDESTRIAN ACCESS IMPLICATIONS

- 30 sec** Improvement in walk time from intervention
- 4 min 30 sec** Total walk time from SW corner of Market/15th to platform

TRAFFIC IMPLICATIONS* & COST

- No change** Assumes no changes to intersection cross section or operations
- \$80-100M** Requires partner + long term O&M

15th & Market: Pedestrian Bridge

15th & Market: Pedestrian Tunnel

Retail Concourse through TOD Site

*Compared to No-Build (2040)

Diagrams show an approximate representation of alignment, station location, and access concepts for illustrative purposes only. Not approved by any party. Preliminary findings. Analysis is ongoing and is subject to change. Costs are shown for comparison purposes only and subject to change with further design

In-meeting feedback exercise: What matters most to you for light rail in Ballard?

Place a dot on each of the three priorities below that are most important to you!



Improve safety of
crossing 15th Ave NW
and/or NW Market St



Provide station entrance
WEST of 15th Ave NW



Maximize equitable Transit
Oriented Development
opportunity in the station area



Proximity of station to
existing Ballard core



Safe walking routes
to the station



Minimize traffic/freight
impacts to 14TH AVE NW



Maximize opportunities for
economic development / new
businesses in station area



Improve access to existing
or new public open spaces



Maximize bus-light rail
transfer convenience



Provide station entrance
NORTH of NW Market St



Minimize impacts to
industrial uses in
designated industrial areas



Proximity of station to
potential future growth
in Ballard



Safe bike routes
to the station



Minimize traffic, freight, and
transit impacts to 15TH AVE
NW and NW MARKET ST



Minimize business
displacements



Stewardship of
public funds

Contact us

wsblink@soundtransit.org or 206-903-7229



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