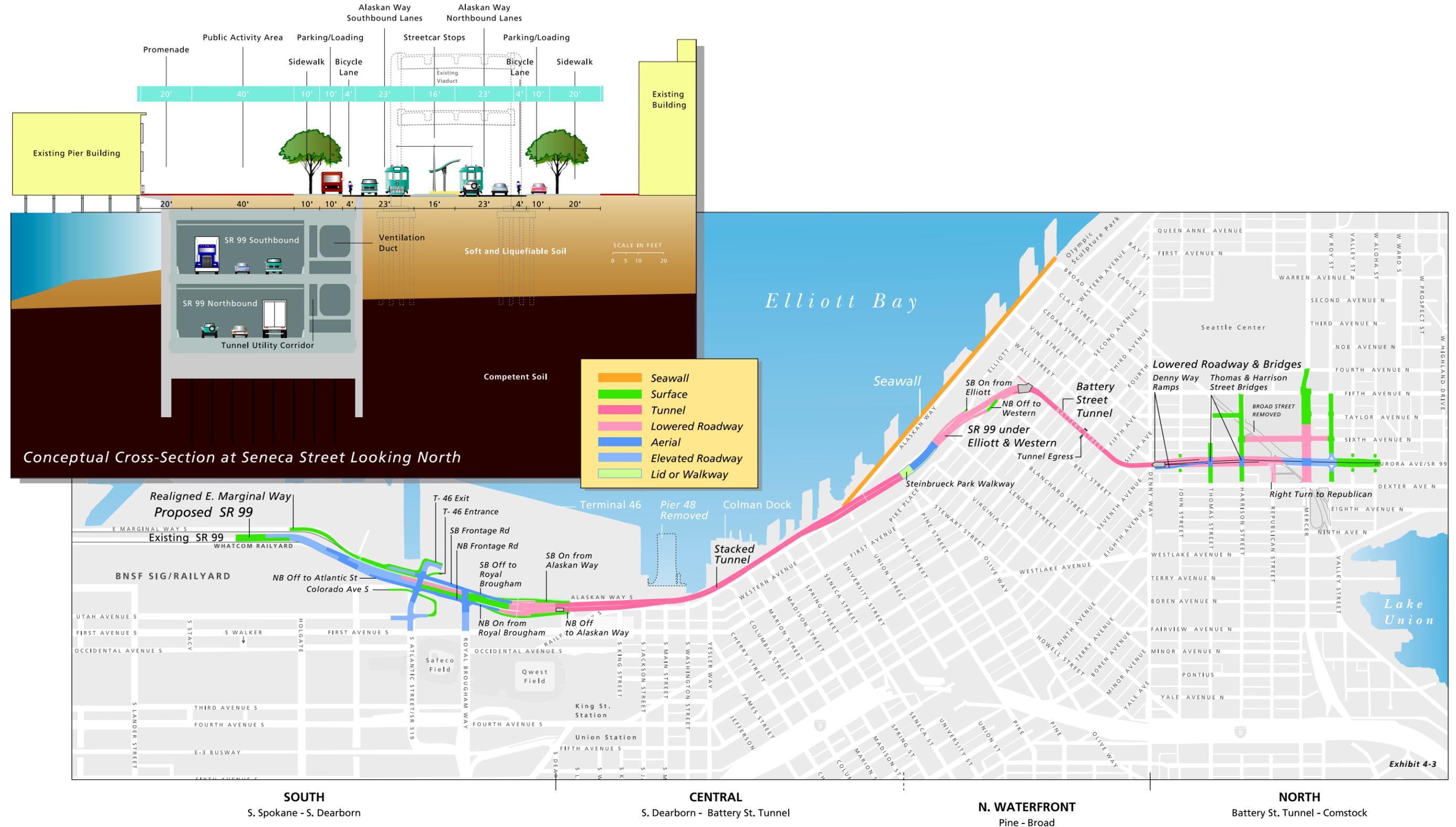


Tunnel Alternative



CHAPTER 4 - THE ALTERNATIVES

What's in Chapter 4?

Chapter 4 describes the components of the Tunnel and Elevated Structure Alternatives.

1 What alternatives are evaluated in this document?

The Tunnel and Elevated Structure Alternatives are evaluated in this document. Exhibit 4-1 shows the components that make up these two alternatives. The top line indicates the preferred components for each alternative. The bottom line shows other design choices that can be made for each alternative.

There are multiple ways the project components can be strung together to create a viable Tunnel or Elevated Structure Alternative. Exhibit 4-2 shows what choices could be made. Both alternatives have the same choices in the south and north end, and the Tunnel Alternative has a number of choices that are possible in the central section. In the central section, the choices to build the Steinbrueck Park Lid, Steinbrueck Park Walkway, and SR 99 under Elliott and Western only apply to the Tunnel Alternative.

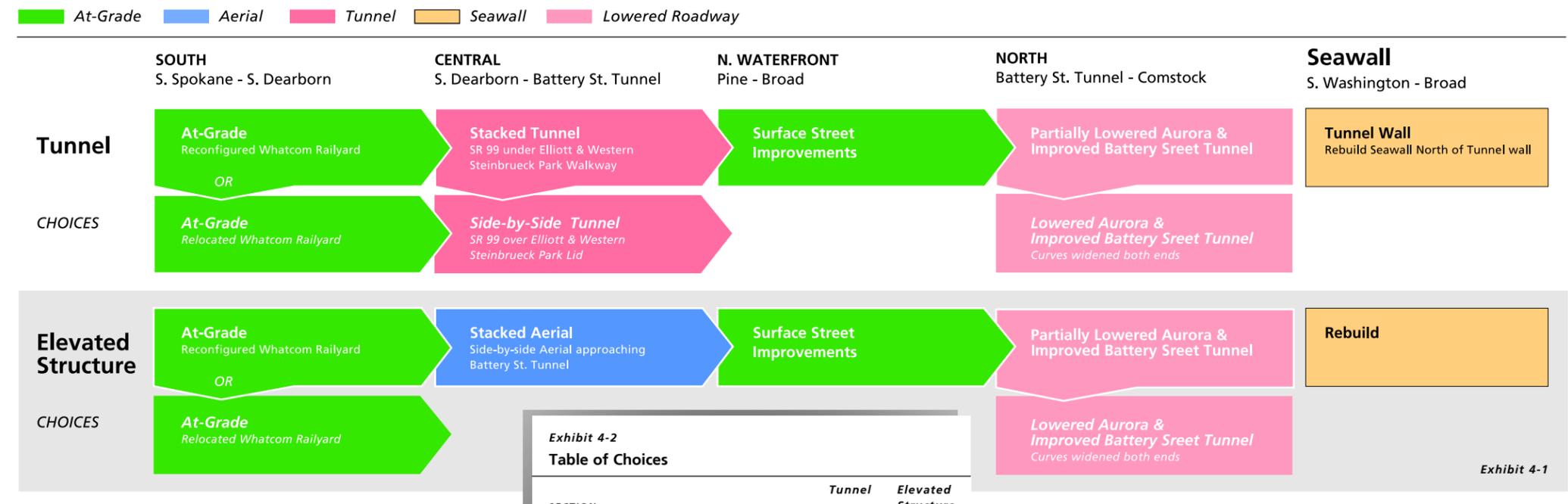
2 How would the Tunnel Alternative replace SR 99 and the viaduct?

The Tunnel Alternative, shown in Exhibit 4-3, includes replacing SR 99 and the Alaskan Way surface street with the following components.

South Section

Reconfigured Whatcom Railyard - The existing viaduct would be replaced with a six-lane, at-grade roadway from S. Walker Street until it approaches S. Massachusetts Street. At S. Massachusetts Street, SR

Alternatives Evaluated in the Supplemental Draft EIS



99 would become a side-by-side aerial structure that crosses over the existing railroad track connecting the Whatcom and Burlington Northern Santa Fe Railway (BNSF) Seattle International Gateway (SIG) Railyards. After “hopping over” the railroad track, SR 99 would return to grade.

The existing ramps at First Avenue S. would be replaced with the new South of Downtown (SODO) Ramps connecting SR 99 to SR 519 at S. Atlantic Street and S. Royal Brougham Way. Frontage roads would be built to facilitate traffic movements between S. Atlantic Street and S. Royal Brougham Way. Between S. Royal Brougham Way and S. Dearborn

Exhibit 4-2 Table of Choices

SECTION	Tunnel	Elevated Structure
SOUTH		
Reconfigured Whatcom Railyard	Yes	Yes
Relocated Whatcom Railyard	Yes	Yes
CENTRAL		
Stacked Tunnel	Yes	No
Side-by-Side Tunnel	Yes	No
Elevated Structure	No	Yes
Steinbrueck Park Walkway	Yes	No
Steinbrueck Park Lid	Yes	No
SR 99 Under Elliott & Western	Yes	No
SR 99 Over Elliott & Western	Yes	Yes
NORTH		
Battery Street Tunnel Improvements and Partially Lowered Aurora	Yes	Yes
Battery Street Tunnel Improvements with Curves Widened and Lowered Aurora	Yes	Yes

2006 Appendix B
 In the 2006 Appendix B, Alternatives Description and Construction Methods Technical Memorandum, Chapter 2 describes the alternatives and design choices (referred to as options) in more detail.

Exhibit 4-1

Elevated Structure Alternative

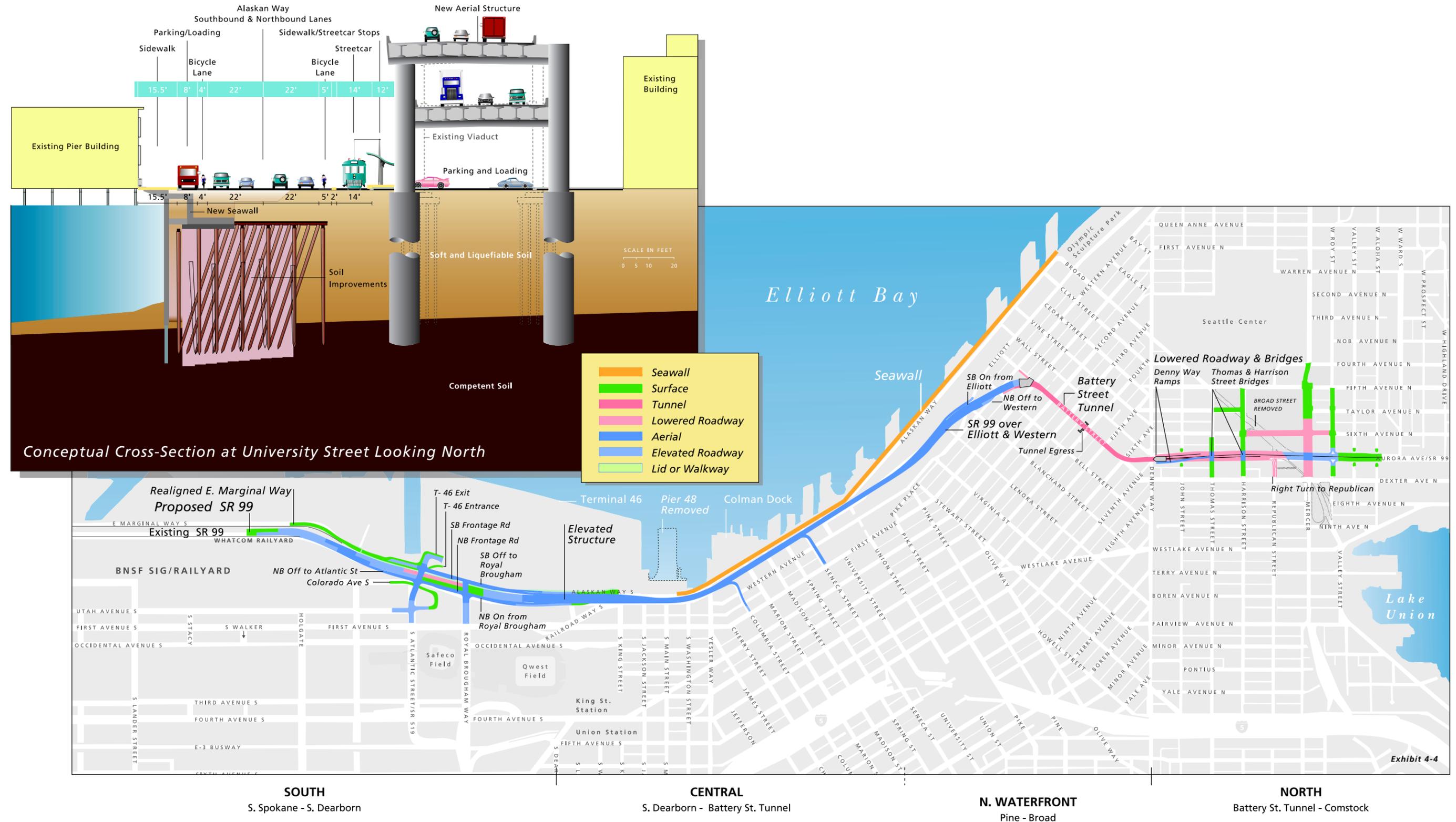


Exhibit 4-4

Street, SR 99 would transition from an at-grade roadway to a tunnel, and ramps would be provided to S. King Street.

The Reconfigured Whatcom Railyard design would require minor adjustments to railroad tracks in the Whatcom and BNSF SIG Railyards. It would also require the tail track, which connects the Whatcom and BSNF SIG Railyards, to be moved from the west side of SR 99 to the east side, extending from about S. Atlantic Street to just south of S. King Street.

Central Section

Stacked Tunnel – The viaduct would be replaced with a stacked, six-lane tunnel (three lanes in each direction) from approximately S. Dearborn Street to Pine Street. The alignment would transition from a side-by-side roadway at each end of the tunnel to a stacked tunnel with the northbound lanes of SR 99 located on the bottom deck of the tunnel and the southbound lanes on the top. The tunnel would be equipped with a ventilation system, fire suppression system, and emergency exits. These tunnel systems would include vent structures at several locations and a tunnel control facility.

Steinbrueck Park Walkway and SR 99 Under Elliott and Western – From Pine to Virginia Streets, SR 99 would transition from the tunnel to an aerial structure, crossing over the railroad tracks. As the roadway emerges from the tunnel, it would be covered by a 150-foot-wide, 180-foot-long lid that would then narrow to a 20-foot-wide, 460-foot-long walkway connecting to Steinbrueck Park. This partial lid structure, called the Steinbrueck Park Walkway, would be built over SR 99 linking Steinbrueck Park and the Pike Place Market to the waterfront. From just north of Virginia Street, SR 99 would connect to the Battery Street Tunnel traveling under Elliott and Western Avenues, where the existing Elliott Avenue on-ramp and Western Avenue off-ramp would be replaced. Because SR 99 would cross under Elliott and Western Avenues, Bell Street could be connected across Western Avenue.

Alaskan Way Surface Street – The Alaskan Way surface street would be replaced with three lanes in each direction from about Rail-road Way S. to Yesler Way. North of Yesler Way, most of Alaskan Way would have two lanes in each direction with center turn pockets. The waterfront streetcar would run on two tracks down the center of the roadway with alternating turn pockets and streetcar stops. Alaskan Way would have expanded open space, a wide waterfront promenade, broad sidewalks on both sides of the surface street, bicycle lanes, and parking.

North Waterfront Section

The Alaskan Way surface street would be reconstructed with four lanes (two lanes in each direction). The streetcar tracks would run along the inside lane in both the northbound and southbound directions with alternating turn pockets and streetcar stops provided between Pine and Broad Streets.

North Section

Battery Street Tunnel Improvements and Partially Lowered Aurora – The Battery Street Tunnel would be improved by lowering the tunnel floor to increase the vertical clearance to 16.5 feet. The existing tunnel safety systems would be updated for fire, ventilation, and emergency egress. The Battery Street Tunnel would also be improved to meet current requirements for earthquakes. A small tunnel support building would be built at each end of the Battery Street Tunnel to house equipment for the ventilation and safety systems.

North of the Battery Street Tunnel, SR 99 would be lowered from the Battery Street Tunnel to about Republican Street. North of Republican, SR 99 would be improved and widened up to Aloha Street. Access on to SR 99 would be provided at Denny Way and Roy Street, and access off SR 99 would be provided at Denny Way, Republican Street, and Roy Street. To improve safety for vehicles on SR 99, cul-de-sacs would be built at John, Valley, and Aloha Streets. The street grid would be connected over the top of SR 99 by building two new bridges at Thomas and Harrison Streets. Broad Street would be closed between Fifth

Avenue N. and Ninth Avenue N. so that the street grid could be reconnected. Mercer Street would continue to cross under SR 99 as it does today, but it would be widened and converted to a two-way street with three lanes in each direction and a center turn lane.

3 What other design choices are being considered for the Tunnel Alternative?

The following design choices can be mixed-and-matched with the components of the Tunnel Alternative described above.

South Section

Relocated Whatcom Railyard – The existing viaduct could be replaced with a six-lane, at-grade roadway from S. Hanford Street to just north of S. Royal Brougham Way. In this area, SR 99 would be moved to the west where the Whatcom Railyard is currently located, and the Whatcom Railyard would be relocated to the east to SR 99's existing footprint, eliminating the need for a bridge over the railroad tracks. Similar to the Reconfigured Whatcom Railyard, it would also require the tail track, which connects the Whatcom and BSNF SIG Railyards, to be moved from the west side of SR 99 to the east side, extending from about S. Atlantic Street to just south of S. King Street.

The existing ramps to First Avenue S. would be replaced with the new SODO Ramps connecting SR 99 and SR 519 at S. Atlantic Street and S. Royal Brougham Way. Frontage roads would be built to facilitate traffic movements between S. Atlantic Street and S. Royal Brougham Way. Between S. Royal Brougham Way and S. Dearborn Street, SR 99 would transition from an at-grade roadway to a tunnel, and ramps would be provided to S. King Street.

Compared to the Reconfigured Whatcom Railyard, this design would provide an additional on-ramp to southbound SR 99 from E. Marginal Way near S. Massachusetts Street. It would also require moving the existing Whatcom Railyard east of its present location to combine it with the BNSF SIG Railyard.

2006 Appendix W

The *2006 Appendix W, Alternatives and Options Drawings*, contains the more detailed drawings of the Tunnel and Elevated Structure Alternatives and the choices.

Central Section

Side-by-Side Tunnel – The viaduct could be replaced with a side-by-side, six-lane tunnel (three lanes in each direction) from approximately S. Dearborn Street to Pine Street. The tunnel would be equipped with a ventilation system, fire suppression system, and emergency exits.

SR 99 Over Elliott and Western – From Pine to Virginia Streets, SR 99 would transition from the tunnel to an aerial structure, crossing over the railroad tracks. From just north of Virginia Street, SR 99 would connect to the Battery Street Tunnel traveling over Elliott and Western Avenues, where the existing Elliott Avenue on-ramp and Western Avenue off-ramp would be replaced.

Steinbrueck Park Lid – A 560-foot-long lid, called the Steinbrueck Park Lid, would be built over SR 99 connecting Steinbrueck Park and the Pike Place Market to the waterfront.

North Section

Battery Street Tunnel Improvements with Curves Widened and Lowered Aurora – The Battery Street Tunnel would be improved as previously described by increasing the height and updating the safety systems for fire, ventilation, and emergency exits. The Battery Street Tunnel would also be improved to meet current standards for earthquake resistance. Additionally, the curves on both ends of the tunnel would be widened to increase the distance drivers can see ahead of them.

North of the Battery Street Tunnel, SR 99 would be lowered from the Battery Street Tunnel to approximately Prospect Street. North of Prospect Street, SR 99 would be improved up to Comstock Street. Four new bridges would be constructed over SR 99 to connect Thomas, Harrison, Republican, and Roy Streets. Access to and from SR 99 would be built at Denny Way, Republican Street, and Roy Street. To improve safety for vehicles on SR 99, cul-de-sacs would be built at John, Valley, Aloha, and Ward Streets. Broad Street would be closed between Fifth

Avenue N. and Ninth Avenue N. so that the street grid could be reconnected. Mercer Street would be rebuilt over the top of SR 99, and it would be widened and converted to a two-way street with three lanes in each direction and a center turn lane.

4 How would the Elevated Structure Alternative replace SR 99 and the viaduct?

The Elevated Structure Alternative is shown in Exhibit 4-4 and includes replacing SR 99 and the Alaskan Way surface street with the following components.

South Section

Reconfigured Whatcom Railyard – In the south, the design for the Elevated Structure Alternative is similar to what is proposed for the Tunnel Alternative with the Reconfigured Whatcom Railyard design. The only differences between the designs for the Tunnel and Elevated Structure Alternatives are that ramps would not be provided to S. King Street, and instead of transitioning to a tunnel, SR 99 would transition from an at-grade roadway to an aerial structure between S. Royal Brougham Way and S. Dearborn Street.

Central Section

Elevated Structure – The existing viaduct would be replaced with a stacked aerial structure along the central waterfront. For the most part, the new structure would have three lanes in each direction, and it would have wider lanes and shoulders than the existing viaduct. Between about S. King Street and the ramps at Columbia and Seneca Streets, SR 99 would have four lanes in each direction. The existing ramps at Columbia and Seneca Streets and Elliott and Western Avenues would be rebuilt. SR 99 would be rebuilt over Elliott and Western Avenues. The new elevated structure would be 11.5 to 35 feet wider than the existing viaduct from south of S. Main Street up to Union Street. Near S. King Street to south of S. Main Street, the new elevated structure would be 54 to 74 feet wider than the existing viaduct as SR 99 transitions from a side-by-side at-grade roadway in the south to a new double-level elevated structure.

Alaskan Way Surface Street – The Alaskan Way surface street would be rebuilt in approximately the same location as it is today with two lanes in each direction. It would, however, be moved slightly to the west to accommodate the wider elevated structure. Between S. King Street and Yesler Way, left-turn pockets may be provided. A single waterfront streetcar track would be rebuilt on the east side of Alaskan Way. Alaskan Way would also have bicycle lanes, on-street parking, and sidewalks.

North Waterfront Section

The Alaskan Way surface street would be reconstructed with four lanes (two lanes in each direction). A single waterfront streetcar track would be rebuilt on the east side of Alaskan Way.

North Section

Battery Street Tunnel Improvements and Partially Lowered Aurora – The Elevated Structure Alternative proposes the same design as the Tunnel Alternative from the Battery Street Tunnel north.

5 What other design choices are being considered for the Elevated Structure Alternative?

In the south and north sections, the Elevated Structure Alternative has the same choices described in Question 3 for the Tunnel Alternative. These choices are:

South Section

- Relocated Whatcom Railyard

North Section

- Battery Street Tunnel Improvements with Curves Widened and Lowered Aurora

6 How would the seawall be replaced?

Both alternatives would replace the seawall from S. Washington Street to just north of Broad Street. Improvements from just north of Broad Street to Myrtle Edwards Park are now being done as a part of the Olympic Sculpture Park project.

For the Tunnel Alternative, the existing seawall would be replaced with the outer wall of the tunnel from S. Washington Street up to Union Street. In most of the areas between Union and Broad Streets where a tunnel is not proposed, the seawall would be replaced by strengthening the soil (or improving the soil by mixing it with cement grout) and replacing the existing seawall with a new face panel and L-wall support structure, as shown in Exhibit 4-5. Near Pier 66, between Blanchard and Battery Streets, only soil improvements are needed since other improvements have already been made to this section of the seawall. Soil improvements and face paneling would replace the failing bulkhead located between S. Jackson Street and S. Washington Street.

The Elevated Structure Alternative proposes to replace the seawall from S. Washington Street to just north of Broad Street using the same seawall design proposed north of Union Street for the Tunnel Alternative, as shown in Exhibit 4-5. Between S. Jackson and S. Washington Streets, soil improvements and face paneling would also replace the failing bulkhead.

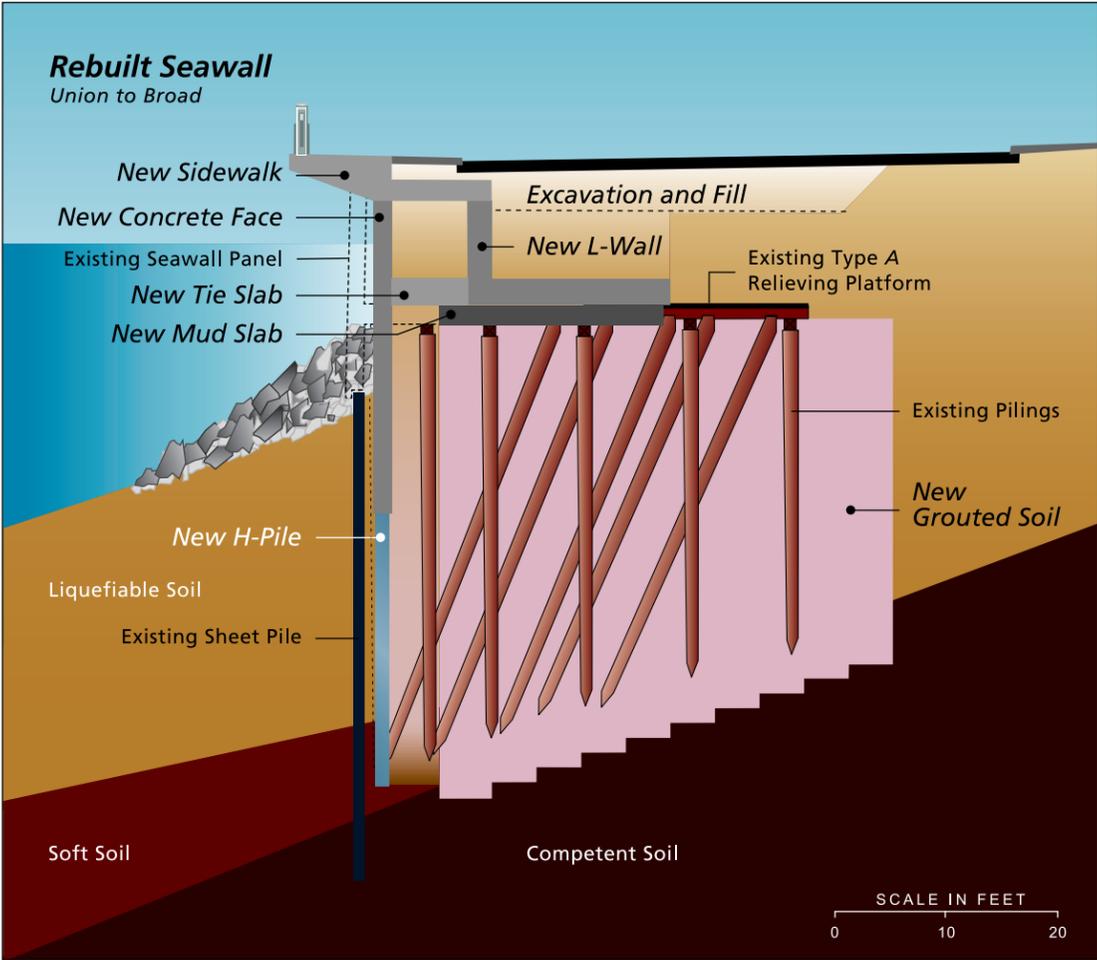


Exhibit 4-5