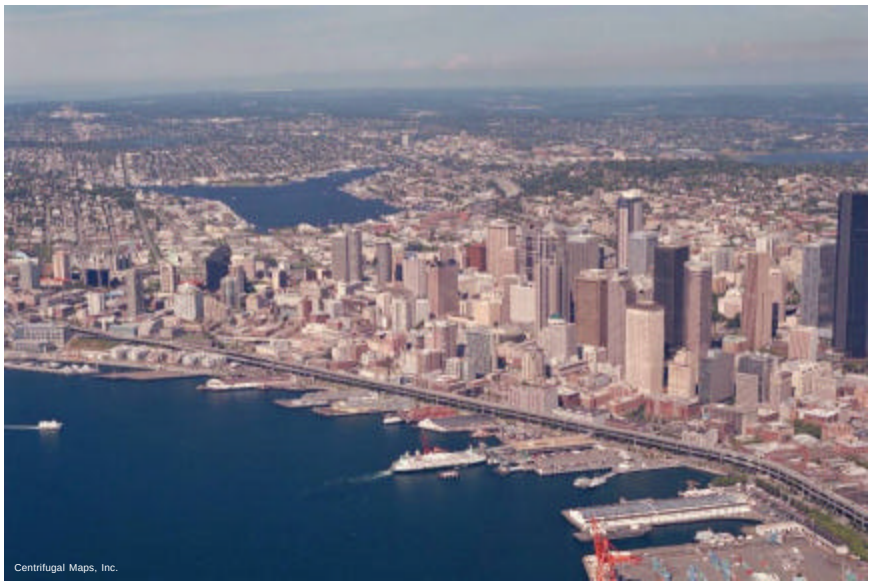
SR 99: ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT

Final Revised Screening of Design Concepts



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SR 99: Alaskan Way Viaduct & Seawall Replacement Project

Revised Screening of Design Concepts

Agreement No. Y-7888

Task 3.18

The SR 99: Alaskan Way Viaduct & Seawall Replacement Project is a joint effort between the Washington State Department of Transportation (WSDOT), the City of Seattle, and the Federal Highway Administration (FHWA). To conduct this project, WSDOT contracted with:

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EXECUTIVE SUMMARY

The Alaskan Way Viaduct and Alaskan Way Seawall are both at the end of their useful lives. Improvements to both are required to protect public safety and maintain the transportation corridor. Because these facilities are at risk of sudden and catastrophic failure in an earthquake, the Washington State Department of Transportation (WSDOT), City of Seattle (City), and Federal Highway Administration (FHWA) are proposing major improvements to the Alaskan Way Viaduct (AWV) Corridor and Alaskan Way Seawall. The AWV Corridor includes portions of East Marginal Way, the SR 99 roadway from S. Spokane Street to S. Holgate Street, the Alaskan Way Viaduct structure, the Battery Street Tunnel, a section of SR 99 north of the Battery Street Tunnel, the Alaskan Way surface street, and the Alaskan Way Seawall. In the project area SR 99 includes an at-grade section from S. Spokane Street to S. Holgate, the Alaskan Way Viaduct structure, the Battery Street Tunnel, and the at-grade roadway section north of the Battery Street Tunnel.

WSDOT, the City, and FHWA have considered dozens of options designed to improve the Alaskan Way Viaduct Corridor and the Alaskan Way Seawall. The purpose of this memorandum is to present the design options that were considered, and to describe the screening process utilized to determine the alternatives that will be evaluated in the project Environmental Impact Statement (EIS).

Seventy-six design concepts were developed through a collaborative process with WSDOT, the City, FHWA, other public agencies, and the public. The 76 concepts were considered in this screening evaluation. They were screened using screening criteria developed and approved by WSDOT, FHWA, City of Seattle, and participating agencies in the Resource Agency Leadership Forum[1]. The screening process resulted in 26 design concepts that will be incorporated into alternatives evaluated in the project EIS.

[1] The Resource Agency Leadership Forum is comprised of regulatory agencies party to the Signatory Agency Committee (SAC) Agreement and local agencies having jurisdiction in the project area.

BACKGROUND

The Alaskan Way Viaduct and Alaskan Way Seawall are both at the end of their useful lives. Improvements to both are required to protect public safety and maintain the transportation corridor. Because these facilities are at risk of sudden and catastrophic failure in an earthquake, the Washington State Department of Transportation (WSDOT), City of Seattle (City), and Federal Highway Administration (FHWA) are proposing major improvements to the Alaskan Way Viaduct (AWV) Corridor and Alaskan Way Seawall. The AWV Corridor includes portions of East Marginal Way, the SR 99 roadway from S. Spokane Street to S. Holgate Street, the Alaskan Way Viaduct structure, the Battery Street Tunnel, a section of SR 99 north of the Battery Street Tunnel, the Alaskan Way surface street, and the Alaskan Way Seawall. In the project area SR 99 includes an at-grade section from S. Spokane Street to S. Holgate, the Alaskan Way Viaduct structure, the Battery Street Tunnel, and the at-grade roadway section north of the Battery Street Tunnel (Figure 1).

WSDOT, the City, and FHWA have considered dozens of options designed to improve the Alaskan Way Viaduct Corridor and the Alaskan Way Seawall. The purpose of this memorandum is to present the design options that were considered, and to describe the screening process utilized to determine the alternatives that will be evaluated in the project Environmental Impact Statement (EIS).

Alaskan Way Viaduct Corridor Description

The Alaskan Way Viaduct (AWV) Corridor includes State Route (SR) 99 from Spokane Street on the south to Ward Street north of the Battery Street Tunnel. Specifically, the AWV Corridor includes portions of East Marginal Way, an at-grade section of SR 99 from Spokane Street to S. Holgate Street; the Alaskan Way Viaduct structure; the Battery Street Tunnel; a section north of the Battery Street Tunnel to Ward Street; the Alaskan Way surface street; and the Alaskan Way Seawall.

East Marginal Way

East Marginal Way runs parallel to SR 99 in the south end of the project area from approximately S. Spokane Street to S. Holgate Street. It is an at-grade roadway operating with signalized intersections. Surface street connections contribute to the AWV Corridor in this segment.

Figure 1
AWV Corridor Map

SR 99 from Spokane Street to South Holgate Street

This section of SR 99 runs between S. Spokane Street and S. Holgate Street. It is an at-grade, limited-access roadway operating with signalized intersections and driveways. Surface street connections contribute to the AWV Corridor in this segment. This portion of the AWV Corridor currently operates adequately because the signalized intersections effectively regulate traffic volume

Alaskan Way Viaduct

The existing Alaskan Way Viaduct is a segment of State Route (SR) 99 connecting S. Holgate Street in the south to the Battery Street Tunnel in the north. The Viaduct is a double-decked, reinforced concrete structure from S. Holgate Street to approximately Pike Street. From Pike Street to the Battery Street Tunnel the Viaduct is a single-level structure. The Viaduct carries 2 to 4 lanes of NB (NB) and 2 to 3 lanes of southbound (SB) traffic through downtown Seattle. There are ramp connections provided to and from local streets at Railroad Way South (near the stadiums), Columbia Street, Seneca Street, Elliott Avenue, Western Avenue, and Battery Street.

The existing Viaduct structure from S. Holgate Street up to the Battery Street Tunnel does not meet current design standards for earthquakes or traffic safety and is nearing the end of its design life. The existing structure has narrow lane widths, vehicle load restrictions, nonstandard roadway shoulders, and ramps with inadequate sight distance and lane lengths.

Battery Street Tunnel

The Battery Street Tunnel is located on the north end of the Alaskan Way Viaduct and runs under Battery Street from 1st Avenue to the surface at John Street just north of Denny Way. The Battery Street Tunnel contains two lanes in each direction.

The Battery Street Tunnel also does not meet current design standards for traffic, fire, and life safety. Options for the Battery Street Tunnel are presented in Section B, Battery Street Tunnel Improvements within the AWV Corridor.

North of the Battery Street Tunnel to Ward Street

The segment north of the Battery Street Tunnel considered as part of the project area extends from where the Battery Street Tunnel emerges near John Street to approximately Ward Street. Surface street connections contribute to the AWV Corridor in this segment. At this section of the AWV Corridor, SR 99 is a limited

access surface street with three lanes in each direction. This segment of the AWV Corridor does not meet current design standards for traffic safety.

Alaskan Way Surface Street

The Alaskan Way surface street is a three to five lane street with signalized intersections providing access along the Seattle waterfront. This roadway parallels Elliott Bay on the west and the Alaskan Way Viaduct to the east. Its southern boundary is S. Royal Brougham Way and its northern boundary is Broad Street. Surface street connections contribute to the AWV Corridor in this segment.

Alaskan Way Seawall

The Alaskan Way Seawall is located along Seattle's downtown waterfront from South Washington Street on the south to Myrtle Edwards Park (near Pier 70) on the north. The Seawall supports the fill soils that the Alaskan Way surface street is built upon. In an earthquake, the Seawall provides support to soils the Alaskan Way Viaduct is built upon.

The Alaskan Way Seawall was constructed in 1916 and 1934. The majority of the Seawall is an anchored bulkhead system. The upper 20 feet of the Seawall is constructed with a pre-cast concrete panel. The concrete panel is supported by a steel bulkhead. The structural details and height of the bulkhead varies. In some places the bulkhead is buried in fill, in other locations it is exposed to the marine waters in Elliott Bay. The steel bulkhead and concrete wall are anchored to a timber relieving platform supported by timber batter piles. The relieving platform supports approximately 13 feet of roadway fill that the Alaskan Way surface street is built upon. A small section of the Seawall in the south end near the Colman ferry dock is constructed of unreinforced, or lightly reinforced, concrete gravity walls supported on piles and concrete sidewalks supported on piles.

The Alaskan Way Seawall is in a state of disrepair and is nearing the end of its useful life. Due to its poor condition, it is vulnerable to earthquakes and unable to resist loads associated with liquefaction of the loose fills on which it is constructed. In an earthquake, liquefaction of these soils is anticipated to result in large displacements of the wall and/or complete failure of the wall. This type of seawall failure could result in damage to adjacent waterfront piers, significant damage to utilities, and potential collapse of Viaduct sections.

Phase 1 Screening Process

Two screening processes called Phase 1 and Phase 2 were conducted to screen design concepts for the Alaskan Way Viaduct Corridor prior to the screening process described in this memorandum. The Phase 1 and Phase 2 screening

processes, and the reasons for the various screening processes are summarized and referenced in the sections below.

WSDOT led the Phase 1 screening process, which was completed in August 2001. The AWV project and Phase 1 screening began as a result of the Nisqually earthquake. The earthquake, which occurred on February 28, 2001, damaged the Viaduct and resulted in closure of the Viaduct for a brief period. The Viaduct was repaired, but structural evaluations were conducted. These structural investigations indicated that the Viaduct was vulnerable to future earthquakes and was nearing the end of its usable design life. Due to is seismic vulnerability, WSDOT began the Phase 1 screening process to develop a range of concepts for retrofitting or replacing the Alaskan Way Viaduct and improving areas located in the AWV Corridor. WSDOT's Phase 1 screening process included the following:

- Developing design concepts
- Developing screening criteria
- Screening initial concepts
- Summarizing primary concepts

Design Concept Development

WSDOT and the Phase 1 consultant team developed an initial list of design concepts in May 2001. The range of concepts listed included corridor-wide concepts as well as concepts specific to the existing elevated Viaduct structure. The initial list was presented to a project Technical Advisory Committee, the Leadership Group[2], the public, various agencies, and local tribes in June 2001 for input and refinement. This resulted in a comprehensive list of 20 concepts with several design sub-options that were narrowed in the Phase 1 screening process.

Screening Criteria Development

Screening criteria were developed based on the project purpose and need. Concepts not meeting the screening criteria were dropped from further evaluation. The following four criteria were used to screen Phase 1 concepts.

- Does the concept meet the program's objectives?
- Is the concept feasible to implement?
- Are the construction impacts manageable?
- Would the concept likely receive required permits and approvals?

[2] The Leadership Group represents a broad group of stakeholders including WSDOT, the City of Seattle, FHWA, area neighborhoods, business interests, and other organizations and agencies.

Screening Initial Concepts and Summarizing Primary Concepts

The initial list of Phase 1 concepts were screened using the criteria above. The screening process resulted in a list of concepts to be considered for further evaluation. Additional details on the Phase 1 Screening Process are found in a report titled "*Alaskan Way Viaduct Study Development and Screening of Concepts, Working Paper #7 and 8*", dated August 2001 by Mirai Associates.

Phase 2 Screening Process

Design Concept Development

Further project definition and refinement took place in Phase 2, which began shortly after the end of Phase 1 in August 2001 and continued through January 2002. In addition, the Federal Highway Administration and the City of Seattle became project co-leads with WSDOT. At this time, additional information was collected regarding the condition of the Alaskan Way Seawall. The information showed that the Seawall was also seismically vulnerable and in a state of disrepair. The information also showed that the structural integrity of the Viaduct is dependent on the Seawall. As a result, the project purpose and need statement was revised to include the Seawall, and the project screening criteria were revised to support the new purpose and need statement. Additional design concepts were developed and evaluated as part of the Phase 2 screening process to consider both the AWV Corridor and the Seawall. These concepts were suggested in meetings involving WSDOT, the City of Seattle, FHWA, neighborhood groups, business interests, organizations and agencies, and the public.

Phase 1 design concepts and Phase 2 design concepts for the Viaduct structure were merged into a list of 64 total concepts to be evaluated in the Phase 2 screening process. These 64 design concepts are listed in Appendix A. Seawall concepts were developed and evaluated separately in the Phase 2 process and are discussed in a separate section below.

Screening Criteria Development

The Phase 2 screening criteria were developed based upon the draft project Purpose and Need statement dated November 2, 2001. The project purpose as stated in the November 2, 2001 statement was "to maintain or improve mobility for people and goods along the existing SR 99 corridor and to improve safety, including the ability of the transportation facilities and the Seawall to resist earthquakes." With this project purpose in mind, the screening criteria were developed to include nine goals. These nine goals were agreed upon by WSDOT the City, and FHWA.

Phase 2 Screening Results

The Phase 2 screening criteria in combination with qualitative and quantitative analyses were used to reduce the number of design concepts for the Viaduct and related improvements from 64 to 19. Details related to the Phase 2 screening activities are documented in the *Screening of Initial Concepts Technical Memorandum,* dated January 2002 by Parsons, Brinckerhoff, Quade, and Douglas Inc.

The 19 design concepts that made it through the screening process were refined into five conceptual alternatives for further evaluation and engineering analysis. Additional information regarding the development of conceptual alternatives is documented in the *Development of Conceptual Alternatives Technical Memorandum*, dated February 2002 by Parsons, Brinckerhoff, Quade, and Douglas, Inc.

Seawall Screening Process

Seawall design concepts were screened as a part of the overall Phase 2 screening process. The results of that process are documented in the *SIR: Alaskan Way Viaduct and Seawall Project Screening of Seawall Concepts*, dated March 2002 written by Berger/Abam Engineers.

REVISED SCREENING PROCESS

Purpose of Revised Screening Process

Conceptual engineering conducted as part of the Phase 2 process resulted in additional information on design options and cost. This information indicated that the estimated cost of constructing several of the conceptual Viaduct and Seawall alternatives were high given potential funding sources. In addition, in November 2002, voters rejected Referendum 51, a tax plan that would have provided some funding for the Alaskan Way Viaduct and Seawall Replacement Project. Due to the lack of project funding, conceptual design options were re-examined to identify additional design options that might be more financially feasible to implement. To broaden the range of options that could be considered, the screening criteria were revised. Because the screening criteria were changed, all of the design concepts from Phase 1 and Phase 2 were re-screened.

Information related to screening for the Viaduct design options are contained in this memorandum. Information related to screening for the Seawall options are contained in a separate memorandum called *SR 99 Alaskan Way Viaduct and Seawall Project Revised Screening of Seawall Concepts*, dated June 2003 submitted by Parsons, Brinckerhoff, Quade, and Douglas.

Design Concept Development

Design Concepts from Phases 1 and 2

A total of 64 design concepts were developed and evaluated in the Phase 1 and Phase 2 screening processes. These 64 concepts are listed in Appendix A and were included for re-evaluation using the new screening criteria. Two of the concepts were merged into one, leaving 63 concepts that were re-evaluated.

Design Concepts Added

Thirteen additional concepts were developed as a result of ongoing conceptual engineering and additional public input. These additional concepts are described in greater detail in this document and include the following:

- Retrofit the existing single-level Viaduct structure
- Rebuild the existing double-level Viaduct structure
- Enclosed one-level aerial replacement – west of existing location
- Combined one-level, two-way express tunnel with two-way surface street
- Combined one or two-level, two-way express aerial with two-way surface street

- Fire, life, safety upgrade to the existing Battery Street Tunnel
- Seismic upgrade to the existing Battery Street Tunnel
- Lowered SR 99/Aurora
- Widened Mercer
- Existing Mercer with Signals on SR 99 north of Battery Street Tunnel

Three concepts previously developed have been further refined in to specific design options. These refined design options include the following:

- Double-level cut-and-cover tunnel through Belltown
- Single bored or mined tunnel under Belltown
- Multiple bored or mined tunnels under Belltown

Screening Criteria Development

To determine the range of options to be included in the EIS, the screening criteria were revised to reflect changed financial conditions. The screening criteria were revised to support the project purpose and need and are expressed as a series of ten goals. The revised screening criteria were approved by WSDOT, FHWA, City of Seattle, and participating agencies in the Resource Agency Leadership Forum[3], and are listed below.

- Goal 1: An alternative must provide facilities that meet current seismic design standards.
- Goal 2: An alternative must maintain the current transportation functions of the Alaskan Way Viaduct Corridor.
- Goal 3: An alternative should not further degrade the operation of other major transportation facilities.
- Goal 4: An alternative should improve traffic safety.
- Goal 5: An alternative should maintain regional transportation linkages.
- Goal 6: An alternative should support bicycle and pedestrian accessibility and mobility.
- Goal 7: An alternative should be compatible with local, express, and high-capacity transit.
- Goal 8: An alternative should support land use and shoreline plans and policies pertaining to development of the downtown Seattle waterfront.
- Goal 9: An alternative should support improved habitat for fish and wildlife along the Alaskan Way Seawall.

[3] The Resource Agency Leadership Forum is comprised of regulatory agencies party to the Signatory Agency Committee (SAC) Agreement and local agencies having jurisdiction in the project area.

- Goal 10: An alternative should rely on proven construction methods, minimize construction duration, and promote effective traffic management during construction.

All design concepts were screened using the ten goals above. Goals 1 and 2 had to be met for an alternative to be advanced. Concepts that did not meet goals 1 and 2 were dropped. Options that met goals one and two were evaluated against the remaining goals. Where similar options were available, the concept that best met the screening criteria goals and project purpose and need were advanced for further consideration. The screening results are summarized in Appendix C.

Screening Results

All 76 design concepts have been screened using the criteria outlined above. The rest of this memorandum describes the design options, their key features, and screening results. The Screening Evaluation Table contained in Appendix C shows how the ten screening criteria goals were used to evaluate the design concepts. The 76 design concepts evaluated were screened to 26 concepts to be carried forward for further analysis in the project EIS.

OVERVIEW OF DESIGN CONCEPTS AND SCREENING RESULTS

There are 76 design concepts identified for rebuilding, replacing, or improving the Alaskan Way Viaduct and its associated corridor. These design concepts have been grouped into five main categories as outlined below. Refer to Appendix C for a summary of the design concepts and results.

A. AWV Improvements from S. Holgate Street to the Battery Street Tunnel

- Retrofit or rebuild the existing Alaskan Way Viaduct
- Replace the Viaduct with an aerial structure
- Replace the Viaduct with a tunnel
- Replace the Viaduct with a surface boulevard
- Replace the Viaduct with a combination of aerial, tunnel, and surface concepts

B. Battery Street Tunnel Improvements within the Existing AWV Corridor

- Upgrade existing Battery Street Tunnel
- Construct a new tunnel through Belltown

C. Roadway Improvements Outside of the AWV Corridor

- Replace the Viaduct with a tunnel outside of the AWV Corridor
- Replace the Viaduct with a bridge across Elliott Bay
- Replace the Viaduct with a submerged or floating tunnel along the waterfront on Elliott Bay
- Replace the Viaduct with a floating bridge along the waterfront on Elliott Bay
- Replace the Viaduct with I-5 improvements
- Replace the Viaduct with combined use of the existing BNSF tunnel under downtown Seattle

D. Multimodal Solutions

- Implement transit and trip reduction measures to maximize efficiency and people-moving capacity in the AWV Corridor

E. Related Improvements (would be combined with other Viaduct replacement concepts)

- Add ramps and improve access
- Extend Alaskan Way Corridor
- Extend SR 99 grade separation

- Improve connections
- Improve freight access
- Improve ferry connections
- Improve pedestrian connections and environment
- Incorporate retail, residential, and public space into aerial structure

In addition to the concepts considered in this screening process, the No Action alternative will be evaluated in the project Environmental Impact Statement (EIS), as required by the National Environmental Policy Act (NEPA).

A: AWV IMPROVEMENTS FROM S. HOLGATE STREET TO THE BATTERY STREET TUNNEL

A1a: RETROFIT EXISTING DOUBLE-LEVEL STRUCTURE

General Functional Description

Under this retrofit design concept, the existing double-level Viaduct structure from S. Holgate Street to approximately Pike Street would be reinforced with additional columns and other structural supports to meet earthquake design standards. The existing deck structure would be replaced. The nonstandard Viaduct lane widths, shoulder widths, and ramps would remain.

Key Features

- Maintains connections to the waterfront, downtown, and Ballard/Interbay
- Substantially less reliable than a replacement structure because of the deterioration that has occurred with age and the different design standards for new construction.
- Requires moderate risk construction methods
- Does not address the nonstandard traffic safety issues (lane widths, shoulder widths, and ramps)
- Requires additional structural support columns that would increase the visual impact and bulk of the structure

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason.

- An April 2003 report entitled *Rebuild/Retrofit 500, 500-Year Design Earthquake,* written by Parsons, Brinckerhoff, Quade, & Douglas, Inc. compares the retrofit and rebuild design concepts for a current standard design level earthquake. The comparison clearly demonstrated that the rebuild design option for the double-level structure from S. Holgate Street to Pike Street is superior to retrofitting the existing double-level structure when seismic performance, aesthetics, cost, and risk are balanced. Therefore, the project purpose and screening criteria goals are better met with Rebuild option A1d, Rebuild Existing Structure.

A1b: RETROFIT EXISTING SINGLE-LEVEL STRUCTURE

General Functional Description

Under this retrofit design concept, the existing single-level Viaduct structure from approximately Pike Street to the Battery Street Tunnel would be strengthened with additional columns and other structural upgrades to meet the project's structural design criteria. The existing deck structure would be replaced. Existing ramps at Elliott and Western Avenues would be strengthened. The nonstandard Viaduct lane widths, shoulder widths, and ramps would be slightly improved.

Key Features

- Ramps at Elliott and Western would be strengthened
- Requires moderate risk construction methods
- Slightly improves existing nonstandard traffic safety issues such as nonstandard lane widths, shoulder widths, and ramps; however, these nonstandard features would remain
- Requires additional structural support columns that would slightly increase the visual impact and bulk of the structure

Screening Results

This option will be carried forward for further evaluation in the EIS.

A1c: RETROFIT EXISTING STRUCTURE - LIMITED TO PASSENGER VEHICLES AND TRANSIT

General Functional Description

Under this concept, the existing structure would be maintained and retrofitted where needed. Facility use would be limited to passenger vehicles and transit only, freight usage would not be provided. Note that buses are similar to trucks in terms of impact on the Viaduct.

Key Features

- Would hinder freight mobility
- Maintains connections to the waterfront, downtown, and Ballard/Interbay
- Relatively short timeframe for implementation as compared to other build alternatives
- Shortest design life

- Substantially less reliable than a replacement structure because of the deterioration that has occurred with age and the different design standards for new construction.
- Requires moderate risk construction methods
- Does not address the nonstandard traffic safety issues (lane widths, shoulder widths, and ramps).

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 2 – This option would create unbalanced access between freight, passenger, and vehicular traffic. It would limit linkages for freight traffic traveling to and from Downtown, through Downtown, and between the Duwamish industrial area and Ballard/Interbay area.

- An April 2003 report entitled *Rebuild/Retrofit 500, 500-Year Design Earthquake,* written by Parsons, Brinckerhoff, Quade, & Douglas, Inc. compares the retrofit and rebuild design concepts for a current standard design level earthquake. The comparison clearly demonstrated that the rebuild design option for the double-level structure from S. Holgate Street to Pike Street is superior to retrofitting the existing double-level structure when seismic performance, aesthetics, cost, and risk are balanced. Therefore, the project purpose and screening criteria goals are better met with Rebuild option A1d, Rebuild Existing Structure.

A1d: REBUILD EXISTING STRUCTURE

General Functional Description

Under this concept, the entire Viaduct structure would be rebuilt in-place. The rebuilt Viaduct structure would be constructed to meet the project's structural design criteria. Nonstandard lane widths, shoulder widths, and ramps would remain, though they would be slightly improved.

Key Features

- Maintains connections to the waterfront, downtown, and Ballard/Interbay
- Slightly improves existing nonstandard traffic safety issues such as nonstandard lane widths, shoulder widths, and ramps; however, these nonstandard features would remain
- Requires high risk construction methods

Screening Results

This option will be carried forward for further evaluation in the EIS.

A2a: TWO-LEVEL AERIAL REPLACEMENT – WEST OF EXISTING

General Functional Description

The existing Alaskan Way Viaduct would be replaced with a split-level structure west of the existing structure. There would be three SB and three NB lanes of traffic through downtown Seattle. Existing access connections near the stadium area, Columbia Street, Seneca Street, Elliott Avenue, and Western Avenue would be replaced. The new SB structure would be built to the west of the existing Alaskan Way Viaduct. The structure would be constructed to meet design standards for lane widths, shoulder widths, and ramps, where feasible.

Key Features

- Provides multiple connections to the waterfront, downtown, and Ballard/Interbay
- Impacts visual quality with a new aerial structure wider than the current Viaduct.
- Limits urban design opportunities in the downtown waterfront area
- Improves traffic safety issues related to nonstandard lane widths, shoulder widths, and ramps

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 8 – This option would move visual impacts of the Viaduct structure closer to the waterfront, which would not be compatible with existing land use and shoreline plans.

- The intent of this design concept and the project purpose and screening criteria goals are better met with Aerial options A1d, Rebuild Existing Structure or A2b, Two-Level Aerial Replacement – Existing Location. These options are being carried forward for further evaluation in the EIS.

A2b: TWO-LEVEL AERIAL REPLACEMENT – EXISTING LOCATION

General Functional Description

The existing Alaskan Way Viaduct would be replaced with a two-level aerial structure in the same location as the existing Viaduct. There would be 3 SB and 3 NB lanes of traffic through downtown Seattle. The existing access connections near the stadium area, Columbia Street, Seneca Street, Elliott Avenue, and Western Avenue would be replaced. The structure would be constructed to meet design standards for lane widths, shoulder widths, and ramps, where feasible.

Key Features

- Provides multiple connections to the waterfront, downtown, and Ballard/Interbay
- Impacts visual quality with a new aerial structure that would be wider than the existing Viaduct
- Limits urban design opportunities in the downtown waterfront area
- Improves traffic safety issues related to nonstandard lane widths, shoulder widths, and ramps

Screening Results

This option will be carried forward for further evaluation in the EIS.

A2c: ENCLOSED TWO-LEVEL AERIAL REPLACEMENT – WEST OF EXISTING LOCATION

General Function Description

This design option would replace the current Viaduct with an aerial structure enclosed by transparent material. The new structure would be constructed west of the existing Viaduct. The Alaskan Way surface street would be relocated to the east side of the new Viaduct structure. The structure would be enclosed from King Street to Pike Street; areas south of King Street and from Pike Street to the Battery Street Tunnel would be open.

The structure would have 3 lanes in each direction. Lane and shoulder widths would be reduced as compared with current design standards. Ramps providing access to downtown and Ballard/Interbay could be provided in the vicinity of King Street and at Elliott and Western Avenues. The Alaskan Way surface street would provide additional waterfront, downtown, and Ballard/Interbay access.

Key Features

- Ramps providing access to downtown and Ballard/Interbay could be provided in the vicinity of King Street and at Elliott and Western Avenues. The Alaskan Way surface street would provide additional waterfront, downtown, and Ballard/Interbay access.
- Reduces noise
- Adds cost to the overall aerial alternative by adding the box-like structure and associated ventilation system
- Requires increased facility maintenance
- Impacts visual quality with a new aerial structure that would be wider and taller than the existing Viaduct
- Enclosure would require state-of-the-art transparent materials, there may be issues related to fire safety
- Limits urban design opportunities in downtown waterfront area and impacts existing waterfront connections to Colman Dock and waterfront businesses
- Lane, shoulder and ramp widths would be improved over existing conditions, but would be nonstandard

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 8 – This option would move visual impacts of the Viaduct structure closer to the waterfront and the enclosed structure would be approximately nine stories (90 feet) in height. This design option would not allow for improved visual, physical, and aesthetic connections between downtown and the waterfront, and would not be compatible with existing land use and shoreline plans.

- Goal 10 – Construction techniques for this structure are unknown and state-of-the-art, increasing overall project risk. In addition, it is unknown whether or not this option is technically feasible to properly engineer for fire, life, and safety risks. Long-term operations and maintenance of the enclosed structure is also a concern.

- The project purpose and screening criteria goals are better met with Aerial options A1d, Rebuild Existing Structure; A2b, Two-Level Aerial Replacement – Existing Location; A5a One-Level Cut-and-Cover Tunnel, or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These options are being carried forward for further evaluation in the EIS.

A3a: ONE-LEVEL AERIAL WITH SIX LANES – OVER EXISTING

General Functional Description

The existing Alaskan Way Viaduct would be replaced with a one-level aerial structure. The aerial structure would have three NB and three SB lanes. The structure would be constructed to meet design standards for lane widths, shoulder widths, and ramps, where feasible.

Access connections to/from downtown would be precluded for SB traffic traveling on the western portion of the one-level facility due to the physical constraint of Elliott Bay. However, access to the waterfront, downtown, and Ballard/Interbay could be provided through Alaskan Way surface street connections. Access connections could be provided for NB traffic. In the southern segment of the project area access ramps could be provided in key locations because they are not physically constrained by Elliott Bay.

Key Features

- Ramp connections in the downtown waterfront area for SB traffic would be precluded, but access to the waterfront, downtown, and Ballard/Interbay could be provided through Alaskan Way surface street connections. Ramps could be provided for NB traffic, and ramp connections in the southern portion of the project area would be feasible
- Impacts visual quality with a new aerial structure substantially wider than the existing Viaduct
- Improves traffic safety issues related to nonstandard lane widths, shoulder widths, and ramps

Screening Results

This option will be carried forward for further evaluation in the EIS for only the south end of the project area from S. Holgate Street to King Street. In the downtown waterfront segment from King Street to the Battery Street Tunnel, this option has been dropped because it does not meet the following goals:

- Goal 8 – In the downtown waterfront portion of the project area, the existing waterfront view corridor would be substantially impacted by this design option due to the width required for a one-level structure. This would not be consistent with existing land use and shoreline plans, and would not allow for improved visual, physical, and aesthetic connections between downtown and the waterfront. However, from S. Holgate Street to S. Royal Brougham Way, views are not as sensitive due to industrial

land uses, therefore, in this segment of the project area, a single-level structure would be feasible.

- In the downtown waterfront area, the project purpose and screening criteria goals are better met by options A1d, Rebuild Existing Structure or A2b, Two-Level Aerial Replacement – Existing Location. However, this option meets the screening criteria goals for the southern portion of the project area, thus for the southern portion of the project area it will be carried forward in the EIS.

A3b: ONE-LEVEL AERIAL WITH SIX LANES – WEST OF EXISTING

General Functional Description

The existing Alaskan Way Viaduct would be replaced with a new one-level aerial structure. The aerial structure would be partially or fully west of the existing structure and have three NB and three SB lanes. The structure would be constructed to meet design standards for lane widths, shoulder widths, and ramps, where feasible.

Ramps to/from downtown would be precluded for SB traffic traveling on the western portion of the one-level facility due to the physical constraint of Elliott Bay. Waterfront, downtown, and Ballard/Interbay access could be provided through Alaskan Way surface street connections, and ramps providing access to downtown and Ballard/Interbay could be provided for NB traffic. In the southern section ramps would not be physically constrained by Elliott Bay.

Key Features

- Ramp connections in the downtown waterfront area for SB traffic would be precluded, but access to the waterfront, downtown, and Ballard/Interbay could be provided through Alaskan Way surface street connections. NB access could be provided. Ramp connections in the southern portion of the project area would be feasible.
- Impacts visual quality with a new aerial structure substantially wider than the existing Viaduct
- Improves traffic safety issues related to nonstandard lane widths, shoulder widths, and ramps

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

South End of Project Area

- From S. Holgate Street to approximately King Street, this option would require the purchase and relocation of extensive railroad facilities and Port of Seattle property. The acquisition and/or displacement of these activities would be minimized by option A3a, One-Level Aerial with Six Lanes – Over Existing. Therefore, in the southern section of the project area the intent of this design concept and the project purpose and screening criteria goals are better met by option A3a.

Central Portion of Project Area

- Goal 8 – From King Street to the Battery Street Tunnel the existing waterfront view corridor would be substantially impacted by this design option due to the width required for a one-level structure. This would not be consistent with existing land use and shoreline plans, and would not allow for improved visual, physical, and aesthetic connections between downtown and the waterfront.

- In the downtown waterfront area, the project purpose and screening criteria goals are better met by options A1d, Rebuild Existing Structure or A2b, Two-Level Aerial Replacement – Existing Location.

A4a: MULTI-LANE BOULEVARD SURFACE ROADWAY

General Functional Description

The surface roadway concept would replace the Alaskan Way Viaduct with an expanded Alaskan Way surface street (a multi-lane boulevard). Signalized intersections would be provided throughout the AWV Corridor to manage traffic movements. Surface street connections would replace existing downtown ramps and project access to the waterfront, downtown, and Ballard/Interbay. Road capacity would be reduced and improvements to transit and implementation of trip reduction measures would be included as mitigation. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Alaskan Way surface street connections would replace existing downtown ramps and provide access to the waterfront, downtown, and Ballard/Interbay.
- Shorter construction time frame for relative to other concepts
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- In some locations east/west movements across Alaskan Way may be restricted, mitigation would be provided as needed

- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Reduces roadway capacity, improvements to transit and implementation of trip reduction measures would be included as mitigation

Screening Results

This option will be carried forward for further evaluation in the EIS.

A4b: MULTI-LANE BOULEVARD SURFACE ROADWAY WITH SECTIONS OF TUNNEL AND/OR OVERPASSES

General Functional Description

This surface roadway design concept is similar to design concept A4a only short sections of tunnel and/or aerial overpasses would be incorporated where needed to facilitate east/west traffic movements across the surface roadway.

Key Features

- Alaskan Way surface street connections would replace existing downtown ramps and provide access to the waterfront, downtown, and Ballard/Interbay.
- Shorter construction time frame for relative to other concepts
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Improves east/west access issues across Alaskan Way where overpasses and/or tunnels are incorporated for access
- Utilities, hazardous soils, and groundwater issues would be challenges for tunnel sections
- Tunnel segments may require a ventilation system
- Reduces roadway capacity, improvements to transit and implementation of trip reduction measures would be included as mitigation

Screening Results

This option will be carried forward for further evaluation in the EIS.

A5a: ONE-LEVEL CUT-AND-COVER TUNNEL UNDER ALASKAN WAY

General Functional Description

This concept proposes to replace the Viaduct with a one-level cut-and-cover tunnel under the existing Alaskan Way surface street along the downtown waterfront. A tunnel is not proposed in the south end of the project area because geotechnical investigations determined that poor soil conditions in this area would pose both extreme technical difficulties and additional expense. These findings are documented in a July 25, 2002 Technical Memorandum written by Shannon and Wilson titled *Geology and Subsurface Characterization for the Alaskan Way Viaduct Project* and an August 2002 Technical Memorandum by Parsons, Brinckerhoff, Quade, & Douglas, Inc. titled *Design Plans C & D Recommendation to Replace Cut and Cover Tunnels in South with Aerial or At-Grade.*

Under this design concept, three lanes would be provided in each direction for NB and SB traffic. Existing ramps at Seneca, Columbia, Elliott, Western, and Battery Street would be replaced by ramps in the vicinity of King Street and Union Street. Additional downtown ramps would likely be precluded by this option. In addition, waterfront, downtown, and Ballard/Interbay access would be provided through Alaskan Way surface street connections. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown and Ballard/Interbay would be provided near King Street and Union Street. Additional access to the waterfront, downtown, and Ballard/Interbay would be possible through Alaskan Way surface street connections
- Additional downtown ramps would likely be precluded by this option
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Western tunnel wall becomes new seawall
- Lengthy construction period
- Construction risks are high due to hazardous soils and groundwater
- Tunnel requires ventilation system
- Improves traffic safety issues related to nonstandard lane and shoulder widths

Screening Results

This option will be carried forward for further evaluation in the EIS.

A5b: TWO-LEVEL CUT-AND-COVER TUNNEL UNDER ALASKAN WAY

General Functional Description

This concept proposes a replace the Viaduct with a two-level cut-and-cover tunnel under the existing Alaskan Way surface street along the downtown waterfront[4].

Under this design concept, three lanes provided in each direction for NB and SB traffic. Existing ramps at Seneca, Columbia, Elliott, Western, and Battery Street would be replaced by ramps in the vicinity of King Street and Union Street. Under this design option it would be feasible to add downtown ramps in a later construction phase, if desired. In addition, waterfront, downtown, and Ballard/Interbay access would be provided through Alaskan Way surface street connections. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown and Ballard/Interbay would be provided near King Street and Union Street. Additional access to the waterfront, downtown, and Ballard/Interbay would be possible through Alaskan Way surface street connections
- Additional ramps to downtown could be constructed at a later phase, but would be expensive and difficult to construct
- Removes visual barrier to waterfront
- Removal of Viaduct structure allows for a variety of urban design options for the area
- Western tunnel wall becomes the new seawall
- Lengthy construction period
- Construction risks are high due to hazardous soils and groundwater
- Tunnel requires ventilation system
- Improves traffic safety issues related to nonstandard lane and shoulder widths

[4] A tunnel is not proposed in the south end of the project area because geotechnical investigations determined that poor soil conditions in this area would pose both extreme technical difficulties and additional expense. These findings are documented in a July 25, 2002 Technical Memorandum written by Shannon and Wilson titled *Geology and Subsurface Characterization for the Alaskan Way Viaduct Project* and an August 2002 Technical Memorandum by Parsons, Brinckerhoff, Quade, & Douglas, Inc. titled *Design Plans C & D Recommendation to Replace Cut and Cover Tunnels in South with Aerial or At-Grade.*

Screening Results

This option has been dropped and will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – This option carries more construction risk than option A5a, One-Level Cut-and-Cover Tunnel because deeper underground tunnel construction would be required. In addition, traffic management during construction would be more difficult with this option as compared with option A5a.

- The intent of this design concept and the project purpose and screening criteria goals can be better met by option A5a, One-Level Cut-and-Cover Tunnel.

A6: COMBINE ONE-LEVEL, ONE-WAY AERIAL AND ONE-WAY SURFACE ARTERIAL

General Functional Description

This is a combination concept that proposes to replace the Viaduct with a one-level aerial structure in one direction and a surface street in the other direction. Connections to the waterfront, downtown, and Ballard/Interbay would be provided either by ramps from the aerial structure or through connections from the Alaskan Way surface street. The facility would be constructed to meet design standards for lane widths, shoulder widths, and ramps, where feasible.

Key Features

- Provides access to the waterfront, downtown, and Ballard/Interbay through either ramps or Alaskan Way surface street connections.
- Reduces visual barrier along waterfront, but does not remove it
- Improves traffic safety issues related to nonstandard lane widths, shoulder widths, and ramps

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option would provide unbalanced access and travel times between NB and SB traffic. The direction of traffic traveling on the surface arterial would have increased travel times, but more downtown access through Alaskan Way surface street connections. The direction of traffic traveling on the aerial structure would have fewer possible downtown access points, but travel times would be

comparable to existing conditions. The intent of this design concept and the project purpose and screening criteria goals can be better met by other design options such as A2b, Two-Level Aerial Replacement – Existing Location and/or A9 Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial.

A7: COMBINE ONE-LEVEL, ONE-WAY TUNNEL AND ONE-LEVEL, ONE-WAY AERIAL

General Functional Description

This is a combination concept that proposes to replace the Viaduct along the downtown waterfront[4] with a one-level tunnel in one direction under the Alaskan Way surface street and a one-level aerial structure in the other direction in the Viaduct's existing location.

With this concept, access from the aerial structure to downtown and Ballard/Interbay could be provided by multiple ramp connections. Ramps to downtown from the one-way tunnel could be provided near King Street. Additional access to the waterfront, downtown, and Ballard/Interbay could be provided through Alaskan Way surface street connections. The facility would be constructed to meet design standards for lane widths, shoulder widths, and ramps, where feasible.

Key Features

- Ramps to downtown from the aerial structure could be provided at multiple locations to access downtown and Ballard/Interbay. Ramps to downtown from the tunnel could be provided near King Street, and additional access to the waterfront, downtown, and Ballard/Interbay would be possible through Alaskan Way surface street connections
- Reduces visual barrier along waterfront, but does not remove it
- Possible reduction in noise impacts
- Western tunnel wall becomes new seawall
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Tunnel requires ventilation system
- Improves traffic safety issues related to nonstandard lane widths, shoulder widths, and ramps

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- The intent of this design option and the project purpose and screening criteria goals can be better met by other design options such as A2b, Two-Level Aerial Replacement – Existing Location; A5a, One-Level Cut-and Cover Tunnel; and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial.

A8: COMBINE ONE-LEVEL, ONE-WAY TUNNEL AND ONE-WAY SURFACE ARTERIAL

General Functional Description

This is a combination concept that proposes to replace the Viaduct with a one-level tunnel in one direction under the Alaskan Way surface street along the downtown waterfront[4] and a surface street in the opposite direction.

Ramps to downtown from the one-way tunnel could be provided near King Street, and additional access would be possible through street connections near the ends of the tunnel portals. Access to the waterfront, downtown, and Ballard/Interbay would be provided through surface street connections to the one-way traffic traveling on the Alaskan Way surface street. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown from the tunnel could be provided near King Street and additional access could be provided through street connections at the tunnel portals. Access to the waterfront, downtown, and Ballard/Interbay would be provided through surface street connections to the one-way traffic traveling on the Alaskan Way surface street.
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Western tunnel wall becomes new seawall
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Tunnel requires ventilation system
- Improves traffic safety issues related to nonstandard lane and shoulder widths

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option would provide unbalanced access and travel times between NB and SB traffic. The direction of traffic traveling on the surface arterial would likely have increased travel times, but more downtown access through surface street connections. The direction of traffic traveling in the tunnel would have fewer possible access points to the waterfront, downtown and Ballard/Interbay, but travel times would likely be comparable to existing conditions. The intent of this design concept and the project purpose and screening criteria goals can be better met by other design options such as A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial.

A9: COMBINE ONE-LEVEL, TWO-WAY BYPASS TUNNEL WITH TWO-WAY SURFACE ARTERIAL

General Functional Description

This is a combination concept that proposes to replace the Viaduct with a one-level, two-way tunnel under the Alaskan Way surface street along the downtown waterfront[4] and a two-way surface street on the top. The tunnel would serve as an express route for through traffic and would have two lanes in each direction. Downtown ramps would be provided in the vicinity of King Street. The Alaskan Way surface street would provide access to the waterfront, downtown, and Ballard/Interbay. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Downtown ramps would be provided in the vicinity of King Street. Access to the waterfront, downtown, and Ballard/Interbay would be provided through multiple surface street connections
- Separates through and local traffic
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Western tunnel wall becomes new seawall
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Tunnel requires ventilation system
- Improves traffic safety issues related to nonstandard lane and shoulder widths

Screening Results

This option will be carried forward for further evaluation in the EIS.

A10: COMBINE TWO-WAY BYPASS AERIAL WITH TWO-WAY SURFACE ARTERIAL

General Functional Description

This is a combination concept that proposes to replace the Viaduct along the downtown waterfront with a two-way bypass aerial structure and a two-way surface street. The new aerial facility could be either single-level or double-level aerial structure. The aerial structure would serve as an express route for through traffic and would have two lanes in each direction. Downtown ramps could be provided in the vicinity of King Street. The Alaskan Way surface street would provide access to the waterfront, downtown, and Ballard/Interbay. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Downtown ramps could be provided in the vicinity of King Street. Access to the waterfront, downtown, and Ballard/Interbay would be provided through multiple surface street connections
- May shorten duration of construction compared with other concepts
- Separates through and local traffic
- Provides access to downtown at multiple locations
- May reduce existing visual impacts along waterfront, though visual impacts would remain
- May improve noise over existing conditions
- Improves traffic safety issues related to nonstandard lane and shoulder widths

Screening Results

This option will be carried forward for further evaluation in the EIS.

A11: BORED TUNNELS UNDER ALASKAN WAY

General Functional Description

Bored tunnels under the existing Alaskan Way surface street along the downtown waterfront[4] would replace the Viaduct. The concept includes two lanes in each direction, and the tunnel would accommodate through traffic. Access to the waterfront, downtown, and Ballard/Interbay would be provided through Alaskan Way surface street connections, a ramp near the King Street area might be feasible. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Access to the waterfront, downtown, and Ballard/Interbay would be provided through multiple surface street connections. Ramps near King Street might be feasible.
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Limited property impacts
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- In addition to construction risk, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

B. BATTERY STREET TUNNEL IMPROVEMENTS

B1a: FIRE, LIFE, AND SAFETY UPGRADE TO THE EXISTING BATTERY STREET TUNNEL

General Functional Description

The Battery Street Tunnel would be upgraded with necessary fire, life, and safety improvements to meet current requirements for fire, ventilation, electrical, and emergency egress.

Key Features

- Does not address nonstandard traffic safety issues (lane and shoulder widths)
- Does not provide a seismic upgrade to the tunnel

Screening Results

This option will be carried forward for further evaluation in the EIS.

B1b: SEISMIC UPGRADE TO THE EXISTING BATTERY STREET TUNNEL

General Functional Description

The Battery Street Tunnel would be seismically upgraded under this design option.

Key Features

- Does not address nonstandard traffic safety issues (lane and shoulder widths)
- Does not provide a tunnel meeting current requirements for fire, ventilation, electrical, and emergency egress (fire, like, and safety)

Screening Results

This option will be carried forward in the EIS pending further investigation.

B2: TWO-LEVEL, CUT-AND-COVER TUNNEL THROUGH BELLTOWN

General Functional Description

A new cut-and-cover tunnel would be constructed through Belltown under Bell Street to connect to a replacement Viaduct structure on the south and SR 99 on the north. The new tunnel would be a two-level, cut-and-cover tunnel with three lanes in each direction. The existing Battery Street Tunnel would be abandoned. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Provides additional capacity to the AWV Corridor by adding one-lane in each direction through the new tunnel
- Construction duration is lengthy
- Construction risks are high due to hazardous soils and groundwater issues
- Improves traffic safety issues related to nonstandard lane and shoulder widths

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing a cut-and-cover tunnel through Belltown would be high because the width of the tunnel would come very close to existing footings of both historic and high-rise buildings.

- This concept is dropped because conceptual engineering analysis of this option revealed that it would cost more to build a new Battery Street Tunnel than what could reasonably be funded in the foreseeable future. Therefore, the project purpose and screening criteria goals can be better met by the No Action option to continue utilizing the Battery Street Tunnel; option B1a, Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel; and/or option B1b Seismic Upgrade to the Existing Battery Street Tunnel.

B3a: BORED OR MINED TUNNEL UNDER BELLTOWN

General Functional Description

A new bored or mined tunnel would be constructed under Belltown to connect to a replacement Viaduct structure to the south and the existing SR 99 to the

north. There are several possible alignments for the tunnel. The new tunnel would be a two-level, deep tunnel with three lanes in each direction. The existing Battery Street Tunnel would be abandoned. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Provides additional capacity to the AWV Corridor by adding one-lane in each direction through the new tunnel
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation
- Improves traffic safety issues related to nonstandard lane and shoulder widths

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored or mined tunnels would be high, due to the size of the tunnels required to accommodate 3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- This concept is dropped because conceptual engineering analysis of this option revealed that it would cost more to build a new Battery Street Tunnel than what could reasonably be funded in the foreseeable future. Therefore, the project purpose and screening criteria goals can be better met by the No Action option to continue utilizing the Battery Street Tunnel; option B1a, Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel; and/or option B1b Seismic Upgrade to the Existing Battery Street Tunnel.

B3b: BORED OR MINED TUNNELS UNDER BELLTOWN

General Functional Description

Similar description to design concept B4a, only two smaller diameter tunnels would be constructed under Belltown to connect to a replacement Viaduct structure to the south and the existing SR 99 to the north. Three lanes would be

provided in each direction. The existing Battery Street Tunnel would be abandoned. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Provides additional capacity to the AWV Corridor by adding one-lane in each direction through the new tunnel
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation
- Improves traffic safety issues related to nonstandard lane and shoulder widths

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored or mined tunnels would be high, due to the size of the tunnels required to accommodate 3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- This concept is dropped because conceptual engineering analysis of this option revealed that it would cost more to build a new Battery Street Tunnel than what could reasonably be funded in the foreseeable future. Therefore, the project purpose and screening criteria goals can be better met by the No Action option to continue utilizing the Battery Street Tunnel; option B1a, Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel; and/or option B1b Seismic Upgrade to the Existing Battery Street Tunnel.

C. ROADWAY IMPROVEMENTS OUTSIDE OF THE AWV CORRIDOR

C1a: TWIN BORED TUNNELS AT WESTERN AVE.

General Functional Description

This concept proposes to replace the existing Viaduct along the downtown waterfront[4] with twin bored tunnels under Western Avenue. Similar to concept A11, this concept includes constructing two lanes in each direction. The focus would be on through traffic. Ramps to downtown would not be provided, but access to the waterfront, downtown, and Ballard/Interbay would be possible through Alaskan Way surface street connections. This concept would likely require bypassing the Battery Street Tunnel and constructing a new tunnel at the north end. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown would not be provided, but access to the waterfront, downtown, and Ballard/Interbay would be possible through Alaskan Way surface street connections
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Requires significant changes to Battery Street Tunnel connection and/or a new tunnel to replace it at the north end
- Limited property impacts
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- In addition to construction risk, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

C1b: TWIN BORED TUNNEL ROUTES AT 1ST AVE. AND 2ND AVE.

General Functional Description

In this concept, the Viaduct along the downtown waterfront[4] would be replaced with twin bored tunnels under 1st and 2nd Avenues. Two lanes would be provided in each tunnel and 2nd Avenue provides extra width potential for increased tunnel capacity. Ramps to downtown would not be provided but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. This concept would require bypassing the Battery Street Tunnel and constructing a new tunnel at the north end. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront

- Removal of Viaduct structure allows for a variety of urban design options
- Requires bypassing Battery Street tunnel and constructing a new tunnel at the north end
- Limited property impacts
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- In addition to construction risk, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

C1c: TWIN BORED TUNNELS AT 3RD AVE.

General Functional Description

This concept proposes to replace the existing Viaduct along the downtown waterfront[4] with twin bored tunnels under 3rd Avenue, below the bus tunnel.

The tunnel would connect with SR 99 north and south of downtown. Ramps to downtown would not be provided but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. This concept would require bypassing the Battery Street Tunnel and constructing a new tunnel at the north end. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Requires bypassing Battery Street tunnel and constructing a new tunnel at the north end
- Limited property impacts
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that

the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

C1d: TWIN BORED TUNNEL ROUTES AT 4TH AVE. AND 5TH AVE. – EAST PORTAL

General Functional Description

This concept proposes to replace the existing Viaduct along the downtown waterfront[4] with twin bored tunnels under 4th and 5th Avenues. They would connect with SR 99 north and south of downtown. The southern terminus would be east of the E-3 bus way at about S. Massachusetts and the north terminus would be at SR 99, just south of Mercer Street. Ramps to downtown would not be provided but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections.

Key Features

- Ramps to downtown would not be provided but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Requires bypassing Battery Street tunnel and constructing a new tunnel at the north end
- Limited property impacts
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

C1e: TWIN BORED TUNNEL ROUTES AT 4TH AVE. AND 5TH AVE. – SOUTH PORTAL

General Functional Description

This concept proposes to replace the existing Viaduct along the downtown waterfront[4] with twin bored tunnels under 4th and 5th Avenues. They would connect with SR 99 north and south of downtown. The southern terminus would be east of the Seattle International Gateway (SIG) Yard at about S. Stacy Street and the north terminus would be at SR 99 at about Denny Way. Ramps to downtown would not be provided but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. This concept would require bypassing the Battery Street Tunnel and constructing a new tunnel at the north end. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown would not be provided but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront

- Removal of Viaduct structure allows for a variety of urban design options
- Requires bypassing Battery Street tunnel and constructing a new tunnel at the north end
- Limited property impacts
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

C1f: TWIN BORED TUNNEL ROUTE AT I-5

General Functional Description

Under this concept, the Viaduct would be replaced with bored tunnels constructed under I-5 through Seattle. The multiple lanes at project completion would increase I-5 capacity. The focus would be on through traffic.

Intermediate connections would be difficult due to tunnel depth and existing I-5 ramps and other structures. This concept would serve as an improvement to I-5 more than as an alternative for the Alaskan Way Viaduct Corridor. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Increases I-5 capacity
- Would not serve the majority of travel needs in the AWV Corridor
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Limited property impacts
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Hazardous soils and groundwater issues present challenges for tunnel construction
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 2 - This concept would not maintain the current transportation functions of the AWV Corridor, nor would it meet the travel demand currently served by the AWV Corridor. This option would eliminate existing access for through traffic traveling between the Duwamish industrial area and Ballard/Interbay.

- Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States.

- In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that

the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, intent of this design concept and the project purpose and screening criteria goals can be better met by other design options such as A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

C2: SIGNATURE BRIDGE ACROSS ELLIOTT BAY FROM WEST SEATTLE

General Functional Description

This concept would replace the existing Viaduct with a signature bridge across Elliott Bay from West Seattle to the Battery Street Tunnel area. It would provide three to four lanes in each direction, designed to meet demand. Ramps to downtown would not be provided, but waterfront, downtown, and Interbay access could be provided through Alaskan Way surface street connections. This option would only provide service to/from West Seattle, and would not serve communities to the north and south of Seattle. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Would not serve all of existing travel needs of Alaskan Way Viaduct Corridor, specifically north and south Seattle traffic
- Ramps to downtown would not be provided, but waterfront, downtown , and Interbay access would be provided through Alaskan Way surface street connections
- Removes visual impact along waterfront, but creates a new visual impact to Elliott Bay
- Removal of Viaduct structure allows for a variety of urban design options
- Impacts navigation in Elliott Bay
- Permitting issues are substantial for ESA, shorelines, and navigational impacts
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Difficult construction due to water depth

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 2 – This option would only provide service to/from West Seattle, and would not serve communities to the north and south of Seattle. Therefore, this option would not maintain the transportation functions within the AWV Corridor.

- Goal 3 – Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a bridge.

- Goal 5– The AWV Corridor would lose some linkages with SR 520, and the Mercer Corridor.

- Goal 8 - The existing waterfront view corridor would be substantially impacted if a new bridge across Elliott Bay were constructed. This would not be consistent with existing land use and shoreline plans.

- Goal 9 – A signature bridge across Elliott Bay would create additional overwater shading, which would reduce fish and wildlife habitat.

- In addition, the bridge concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

C3: ELLIOTT BAY SUBMERGED TUNNEL ALONG WATERFRONT AREA

General Functional Description

Under this concept, a submerged tunnel would replace the Viaduct along the downtown waterfront. Three lanes would be provided in each direction. The focus would be on through traffic. Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Impacts navigation in Elliott Bay
- Permitting issues are substantial and include ESA, shoreline issues, and navigation

- Ramps to downtown would not be provided, but waterfront, downtown , and Ballard/Interbay access would be provided through Alaskan Way surface street connections
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 3 – Marine transportation in the Port of Seattle and Washington State Ferry Terminal would be degraded by the addition of a submerged tunnel along the waterfront.

- Goal 5 – Ferry system access would be restricted.

- Goal 9 – Submerged tunnel construction and long-term operation would reduce overall fish and wildlife habitat.

- Goal 10 – Requires complicated, high-risk construction methods for deep water tunnel construction

- In addition, the submerged tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

C4: I-5 IMPROVEMENTS TO ACCOMMODATE A PORTION OF SR 99 DEMAND

General Functional Description

This concept proposes to replace the Viaduct by increasing capacity on I-5 to accommodate a portion of the SR 99 demand. Increased capacity on I-5 would be accomplished through widening. This concept would serve as an improvement

to I-5 more than as an alternative for the AWV Corridor. Existing transportation functions within the Corridor would not be maintained. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Would not serve majority of travel needs and maintain transportation functions served in the AWV Corridor
- Removes visual barrier for waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Very difficult to add capacity in I-5 corridor without substantial property impacts
- Likely high cost
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 2 – This option would not maintain the transportation functions within the AWV Corridor that provide for the movement of people, freight, and goods traveling to and from downtown, between the Duwamish industrial area and Ballard/Interbay, and through downtown.

- In addition, this concept would not meet the project purpose and need. It would not address the seismic deficiencies of the existing Seawall and Viaduct unless paired with separate Viaduct and Seawall options.

C5: ELLIOTT BAY FLOATING TUNNEL ALONG WATERFRONT AREA

General Functional Description

This concept proposes to replace the Viaduct with a submerged floating tube under Elliott Bay, along the waterfront. Three lanes would be provided in each direction. The focus would be on through traffic. Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. The facility would

be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Impacts navigation in Elliott Bay
- Permitting issues are substantial and include ESA, shoreline issues, and navigation
- Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections.
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Reduces traffic noise
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires complex, state-of-the-art construction with high costs and high risks
- Relatively long construction period compared with other concepts
- Requires complex design for capacity, safety, and ventilation

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 3 – Marine transportation in the Port of Seattle and Washington State Ferry Terminal would be degraded by the addition of a submerged tunnel along the waterfront.

- Goal 9 – Floating tunnel construction and long-term operation would reduce fish and wildlife habitat.

- Goal 10 – Requires complicated, high-risk construction methods for deep water tunnel construction

- In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

C6: SIGNATURE BRIDGE FROM STADIUM AREA TO BELLTOWN VIA ELLIOTT BAY

General Functional Description

This concept would replace the Viaduct with a high-rise suspension bridge across Elliott Bay from the stadium area to Belltown. It would provide three to four lanes in each direction. Opportunities would exist to expand capacity in the future. Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections.
- Removes visual impact along waterfront, but creates a new visual impact to Elliott Bay
- Removal of Viaduct structure allows for a variety of urban design options
- Impacts navigation in Elliott Bay
- Permitting issues are substantial for ESA, shorelines, and navigational impacts
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Difficult construction due to water depth in excess of 200 feet

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 3 – Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a bridge.

- Goal 8 - The existing waterfront view corridor would be substantially impacted if a new bridge across Elliott Bay were constructed. This would not be consistent with existing land use and shoreline plans.

- Goal 9 – Construction and long-term operation of a bridge over Elliott Bay would create overwater shading, which would reduce fish and wildlife habitat.

- In addition, this concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

C7: EXISTING 4th AVENUE BNSF TUNNEL TRANSITIONING TO CUT-AND-COVER TUNNEL

General Functional Description

This concept proposes to replace the existing Viaduct along the downtown waterfront with a cut-and-cover tunnel that connects with the existing BNSF rail tunnel under 4th Avenue. The north portal of the BNSF tunnel at Blanchard Street would be connected to a point north of Broad Street by way of a cut-and-cover tunnel. Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Limited capacity in BNSF tunnel due to tunnel size
- Impacts BNSF use of tunnel and movement of goods and freight
- Requires substantial upgrades to the BNSF Tunnel
- Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections.
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along waterfront
- Removal of Viaduct structure allows for a variety of urban design options
- Limited property impacts
- Reduces traffic noise
- Could improve traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 2 – This option would restrict the transport of BNSF freight and goods throughout the AWV Corridor. The existing BNSF tunnel is constrained, and it is likely that transportation functions currently provided by the AWV Corridor would not be maintained.

- Goal 3 - Operations of the BNSF Railroad would be degraded by this option, and tunnel capacity is constrained.

- In addition, this concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

C8a: FLOATING BRIDGE FROM PORT OF SEATTLE PROPERTY TO CONNECT AT BROAD STREET

General Functional Description

This concept proposes to replace the existing Viaduct with a floating bridge from the Port of Seattle property on the south end of the Viaduct to connect to the existing SR 99 at Broad Street. This option would likely require the construction of a new Ramps from the floating bridge would not be provided but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections. This concept would require bypassing the Battery Street Tunnel and constructing a new tunnel at the north end. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Requires relocation of Port of Seattle, ferry, and cruise ship operations
- Impacts navigation in Elliott Bay
- Permitting issues are substantial and include ESA, shoreline issues, and navigation
- Ramps to downtown would not be provided, but waterfront, downtown, and Ballard/Interbay access would be possible through Alaskan Way surface street connections.
- Separates through and local traffic, with through traffic focus
- Removes visual barrier along the waterfront, but creates new visual impacts to Elliot Bay
- Removal of Viaduct structure allows for a variety of urban design options
- Requires bypassing the Battery Street Tunnel and constructing a new tunnel at the north end
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall

- Requires difficult construction due to water depth in excess of 200 feet

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 3 – Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a floating bridge.
- Goal 5 – Ferry system access would be restricted.
- Goal 9 – Construction and long-term operation of a floating bridge along Elliott Bay would reduce fish and wildlife habitat.
- In addition, this concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

C8b: FLOATING BRIDGE FROM PORT OF SEATTLE PROPERTY TO CONNECT AT SENECA STREET

General Functional Description

This concept proposes to replace a section of the Viaduct with a floating bridge from the Port of Seattle property on the south end to connect to the existing Viaduct at Seneca Street. Ramps from the floating bridge would not be provided, but access to the waterfront, downtown, and Ballard/Interbay could be provided north or south of the bridge. The facility would be constructed to meet design standards for lane and shoulder widths, where feasible.

Key Features

- Would only fix seismic deficiencies in the Viaduct up to Seneca, unless paired with another design concept north of Seneca
- Ramps from the floating bridge would not be provided, but waterfront, downtown, and Ballard/Interbay access could be provided north or south of the bridge.
- Requires relocation of Port of Seattle, ferry, and cruise ship operations
- Impacts navigation in Elliott Bay
- Permitting issues are substantial and include ESA, shoreline issues, and navigation
- Removal of Viaduct structure allows for a variety of urban design options
- Separates through and local traffic, with through traffic focus

- Removes visual barrier along the waterfront, but creates new visual impacts to Elliot Bay
- Improves traffic safety issues related to nonstandard lane and shoulder widths
- Would not address seawall deficiencies unless paired with a design option to improve the seawall
- Requires difficult construction due to water depth in excess of 200 feet

Screening Results

This option has been dropped, and it will not be evaluated in the EIS because it does not meet the following goals:

- Goal 3 – Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a floating bridge.

- Goal 5 – Ferry system access would be restricted.

- Goal 9 – Construction and long-term operation of a floating bridge along Elliott Bay would reduce fish and wildlife habitat.

- In addition, this concept would not address the seismic deficiencies of the existing Seawall and the Viaduct north of Seneca unless it is paired with additional design options.

D. MULTIMODAL SOLUTIONS

D1: TRANSPORTATION SYSTEM/DEMAND MANAGEMENT TO MAXIMIZE EXISTING SYSTEM

General Functional Description

The goal of this concept is to use transportation system and demand management (TSM/TDM) to maximize the existing system either through changes to improve traffic flow or reduce demand on facilities. The components of this concept include maximizing transit and non-motorized modes and the use of existing transportation facilities. Modest improvements to several existing facilities would be combined with an emphasis on alternative modes. Possibilities include transit priority, pricing strategies for general traffic and freight to minimize vehicle demand, and improved pedestrian and bicycle connections.

Key Features

- Emphasizes pedestrian and bicycle opportunities
- Short time-frame for implementation
- Generally lower cost in comparison to capital improvements

Screening Results

This option will be carried forward for further evaluation in the EIS.

TSM/TDM measures are being carried forward as components of all alternatives being evaluated in the EIS. An additional description of the range of TSM/TDM measures are contained in the December 2002 document entitled *Draft Flexible Transportation Package: An Integrated Program of Demand and System Management Strategies*, written by Parsons, Brinckerhoff, Quade, and Douglas, Inc.

D2: HIGH CAPACITY TRANSIT ALONG EXISTING AWV CORRIDOR WITH NEW CONCEPT

General Functional Description

This concept proposes to combine a High Capacity Transit route, such as Light Rail Transit, Monorail, or Bus Rapid Transit, together with a Viaduct reconstruction or replacement option. Variations may include a High Capacity Transit route adjacent to, above, or below, a new or rebuilt Viaduct facility, within new tunnel structure, or above or part of the Alaskan Way surface street option.

Key Features

- Ties to ongoing King County Metro Bus Rapid Transit and the Seattle Popular Monorail Authority's planning efforts
- Could be used to accommodate future traffic demand and/or reduce capacity needs in the Corridor
- Could expand transit capacity through downtown
- Timing of decisions need to be coordinated
- Waterfront route may not be preferred transit corridor
- Adds time and cost to project

Screening Results

This option will be carried forward for further evaluation in the EIS.

Increased transit will be considered as part of the alternatives being evaluated in the EIS. An additional description of the range of transit measures that will be incorporated are contained in the December 2002 document entitled *Draft Flexible Transportation Package: An Integrated Program of Demand and System Management Strategies*, written by Parsons, Brinckerhoff, Quade, and Douglas, Inc.

E. RELATED IMPROVEMENTS (WOULD BE COMBINED WITH OTHER VIADUCT REPLACEMENT CONCEPTS)

E1a: ADD MISSING RAMPS AT S.SPOKANE ST./ ALASKAN WAY INTERCHANGE

General Functional Description

This concept would add missing ramps at the S. Spokane Street/Alaskan Way interchange.

Key Features

- Improves freight access
- Removes trucks from city streets; more effectively uses AWV Corridor for freight
- Improves access from West Seattle

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.

E1b: IMPROVE ACCESS AT STADIUM AREA

General Functional Description

This concept would improve the access in the vicinity of the baseball stadium and the new football stadium. Connections between surface streets and the AWV would be provided.

Key Features

- Improves existing design deficiencies at existing ramps
- May help relieve traffic on city streets
- May help balance flows between SR 99 and I-5
- Reduces role of Viaduct as a bypass through downtown
- May cause traffic congestion concerns on Viaduct due to added volume
- Requires coordination with SR 519 improvements

Screening Results

This concept will be included[5] in design plans being evaluated in the EIS.

Existing access to the Viaduct is currently limited at the Stadium Area to a NB on-ramp at Railroad Way S. Options to improve Stadium area access are related to design option E2f, Improve I-90/SR 519/SR 99 Connections, which is supported by screening criteria Goal 5[6]

E1c: ADD NEW ACCESS AT THE DOWNTOWN CORE

General Functional Description

This concept would add new access at the downtown core. Connections between surface streets and the AWV would be improved.

Key Features

- Improves existing design deficiencies at ramps
- May help relieve traffic on city streets
- May help balance flows between SR 99 and I-5
- Reduces role of Viaduct as a bypass through downtown
- May cause traffic congestion concerns on Viaduct and immediate adjacent streets due to added volume

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not directly related to the purpose of the project. Most of the design options would not preclude new access into downtown; however, design options that would preclude additional access into downtown (such as design option A5a, One-Level Cut-and-Cover Tunnel Under Existing Alaskan Way) will be disclosed in the EIS.

[5] For the purposes of this screening process the term "included" means that the general concept has been incorporated in one or more specific design options being carried forward for further analysis in the EIS.

[6] Goal 5 requires the project to maintain regional transportation linkages. Specifically, Goal 5 states that an alternative should integrate functional with planned transportation projects such as SR 519.

E1d: IMPROVE ACCESS AT BATTERY ST./WESTERN AVE./ELLIOTT AVE.

General Functional Description

This concept would improve the access at Battery Street/Western Avenue/Elliott Avenue.

Key Features

- Improves design deficiencies at existing ramps
- Improves traffic safety
- May help relieve traffic on city streets
- May cause traffic congestion concerns on Viaduct and immediate adjacent streets due to added volume

Screening Results

This option will be carried forward for further evaluation in the EIS.

The existing ramps at Battery Street/Western Avenue/Elliott Avenue are nonstandard and have safety deficiencies. Options to improve these deficiencies are supported by screening criteria Goal 4[7] and will be incorporated where feasible into design plans carried forward into the EIS. See also concepts E2e, Improve Ballard/Interbay Connections and E3e, Improve Broad Street Rail Crossing.

E1e: ADD S. SPOKANE STREET OFF-RAMP TO 6TH AVENUE S. FOR BUSES

General Functional Description

This concept would add an off-ramp to 6th Avenue S. from S. Spokane Street for bus use.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

[7] Goal 4 states that the project should improve traffic safety.

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E1f: ADD S. SPOKANE STREET OFF-RAMP TO 4TH AVENUE S.

General Functional Description

This concept would add an off-ramp from S. Spokane Street to 4th Avenue S.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E1g: ADD EXTENSION TO THE S. SPOKANE STREET 4TH AVENUE ON-RAMP

General Functional Description

This concept would add an extension to the S. Spokane Street 4th Avenue on-ramp.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E1h: PROVIDE SOUTHBOUND ACCESS TO SR 99 FROM WEST SEATTLE BRIDGE

General Functional Description

This concept would add SB access to SR 99 from the West Seattle Bridge.

Key Features

- Creates additional access to SR 99
- May cause traffic congestion concerns on Viaduct and immediate adjacent streets due to added volume
- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E2a: ADD CONNECTION TO SOUTH LAKE UNION AREA

General Functional Description

This concept would add connections to the South Lake Union area. Access to and from South Lake Union and SR 99 would be improved.

Key Features

- Improves access to/from the waterfront and South Lake Union area
- May cause traffic congestion concerns on Viaduct and immediate adjacent streets due to added volume
- May improve traffic circulation and improve existing traffic issues at Mercer Street and other streets
- Could allow for reconnection of street grid in South Lake Union area

Screening Results

This concept will be included[8] in design plans being evaluated in the EIS.

[8] For the purposes of this screening process the term "included" means that the general concept has been incorporated in one or more specific design options being carried forward for further analysis in the EIS.

The option to add or improve connections to the South Lake Union Area north of the Battery Street Tunnel will be included into specific design options being carried forward into the EIS. These specific design options include E21, Lowered Aurora/SR 99; E2m, Widened Mercer; and E2n, Existing Mercer with Signals on SR 99 North of the Battery Street Tunnel.

E2b: EXTEND ALASKAN WAY VIADUCT CORRIDOR TO I-5 THRU MERCER ST. CORRIDOR

General Functional Description

The AWV Corridor would be extended to I-5 through the Mercer Street corridor at the south end of Lake Union.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E2c: EXTEND SR 520 TO ALASKAN WAY VIADUCT CORRIDOR

General Functional Description

This concept proposes to extend SR 520 west to the AWV Corridor.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E2d: EXTEND SR 99 GRADE SEPARATION OVER 1ST AVE. S. BRIDGE TO SR 509

General Functional Description

This concept would extend the SR 99 grade separation over the 1st Avenue South Bridge to SR 509.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E2e: IMPROVE BALLARD/INTERBAY CONNECTIONS

General Functional Description

For this regional connection concept, connections between SR 99 and Ballard/ Interbay would be improved.

Key Features

- Improves design deficiencies at existing ramps
- Improves traffic safety
- May help relieve traffic on city streets
- May cause traffic congestion concerns on Viaduct and immediate adjacent streets due to added volume

Screening Results

This concept will be included[9] in design plans being evaluated in the EIS.

The existing ramps providing the Ballard/Interbay connection are located at Western Avenue and Elliott Avenue. These ramps are nonstandard and have safety deficiencies. Options to improve these deficiencies are supported by

[9] For the purposes of this screening process the term "included" means that the general concept has been incorporated in one or more specific design options being carried forward for further analysis in the EIS.

screening criteria Goal 4[10] and will be incorporated where feasible into design plans carried forward into the EIS. Specifically, this concept is incorporated into design option E1d, Improve the Access at Battery Street/Western Avenue.

E2f: IMPROVE I-90 / SR 519 / SR 99 CONNECTIONS

General Functional Description

This concept proposed to improve the connections between I-90, SR 519, and SR 99.

Key Features

- Further study required for I-90 connections
-
- For SR 519/SR99 Connections the following key features apply
- Improves existing design deficiencies at existing ramps and improve safety
- May help relieve traffic on city streets
- May help balance flows between SR 99 and I-5
- Reduces role of Viaduct as a bypass through downtown
- May cause traffic congestion concerns on Viaduct due to added volume
- Requires coordination with SR 519 improvements

Screening Results

This design option to improve I-90 access has been dropped, and it will not be evaluated in the EIS for the following reasons:

- The concept of improving the connections between SR 99 and I-90 and between I-90 and SR 519 is not precluded; however, it is not related to the purpose of the project.

The design option to improve SR 519/SR 99 connections will be carried forward for further evaluation in the EIS.

The concept of improving the connection between SR 99 and SR 519 is supported by Goal 5[11]of the screening criteria and is being incorporated into design options being carried forward into the EIS.

[10] Goal 4 states that the project should improve traffic safety.

[11] Goal 5 requires the project to maintain regional transportation linkages. Specifically, Goal 5 states that an alternative should integrate functional with planned transportation projects such as SR 519.

E2g: IMPROVE I-5 / SR 99 CONNECTION AT S.SPOKANE STREET

General Functional Description

The connection between I-5 and SR 99 would be improved at S. Spokane Street.

Key Features

- Further study required
-

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

E2h: IMPROVE WATERFRONT ACCESS BETWEEN THE WEST SEATTLE BRIDGE AND BATTERY STREET

General Functional Description

Access to the waterfront would be improved at all points between the West Seattle Bridge and Battery Street.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option is not precluded, but is dropped because it is not directly related to the purpose of the project. However, the intent of all of the options being carried forward is to improve waterfront access, where feasible, to and from downtown and along the waterfront.

E2i: LOCATE TUNNEL PORTAL AT ROY STREET TO RECONNECT CROSSINGS AT THOMAS AND HARRISON

General Functional Description

This concept proposes to locate a concept's tunnel portal at Roy Street, allowing for the reconnecting of Thomas Street and Harrison Street.

Key Features

- Requires construction of a new north end tunnel to replace the Battery Street Tunnel or it requires extending the existing Battery Street Tunnel to Roy Street
- Improves access and circulation north of the Battery Street Tunnel

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept requires the construction of a new tunnel to replace the Battery Street Tunnel, which is an option that has been dropped because the option to continue utilizing the Battery Street Tunnel accomplishes a similar goal as constructing a new tunnel with fewer risks and lower costs. Conceptual engineering analysis of this option revealed that it would cost more than what could reasonably be funded in the foreseeable future.

E2j: ADD OFF-RAMP TO AIRPORT WAY

General Functional Description

This concept would add an off-ramp to Airport Way.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.

E2k: RE-UTILIZE BATTERY STREET TUNNEL AS A VEHICULAR CONNECTION TO ALASKAN WAY

General Functional Description

This concept would re-use the Battery Street Tunnel as a vehicular connection to Alaskan Way, reducing traffic on Broad Street at Alaskan Way.

Key Features

- Requires construction of a new north end tunnel to replace the Battery Street Tunnel
- May reduce traffic on Broad Street
- Provides additional roadway capacity through Belltown

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option has been dropped because the current project proposes to use the existing Battery Street Tunnel as part of any alternative to be evaluated in the EIS. This design concept was originally developed as an alternative use to the existing Battery Street Tunnel if a new tunnel under Belltown were created as part of the project. Conceptual engineering analysis of this option to construct a new Battery Street Tunnel revealed that it would cost more than what could reasonably be funded in the foreseeable future; therefore, this design option has been dropped.

E2l: LOWERED AURORA/SR 99

General Functional Description

This concept proposes to lower Aurora/SR 99 from the north portal of the Battery Street Tunnel to Ward Street. Mercer Street would cross over SR 99 as a one-way street with four lanes east bound. Roy Street would cross over SR 99 as a one-way street with three lanes west bound. Thomas, Harrison, and Republican Streets could be connected by crossing over SR 99 as two-way streets with two lanes in each direction. Broad Street would be closed from 5th Avenue to 8th Avenue. SR 99 would be two lanes in each direction from the Battery Street Tunnel to north of Roy Street where it would become three lanes in each direction. Transit only ramps would be provided to and from Denny Way. A north bound off ramp and south bound on ramp from Mercer Street would be provided, and would include an auxiliary lane in each direction to connect to the

Denny Way transit ramps. At Roy Street north bound on, and south bound off ramps would be provided

Key Features

- Improves corridor operations by eliminating turning movements
- Improves neighborhood circulation by re-connecting the street grid
- Improves operations at Denny Way intersection by reducing traffic to transit only
- Eliminates multiple access points from SR 99 to the South Lake Union area
- Improves safety by eliminating existing street connections, which require rapid acceleration/deceleration on the mainline
- Improves connectivity between primary routes (SR 99, Mercer Street, Roy Street, and I-5)
- Removes barrier to neighborhood
- Hazardous soils present challenges for construction
- Considerable disruption to neighborhood and traffic during construction
- Lengthy construction period
- Accommodates traffic flow during AWV construction by utilizing Broad Street as a temporary detour for SB SR 99 traffic

Screening Results

This option will be carried forward for further evaluation in the EIS.

This concept would provide access along SR 99 north of the Battery Street Tunnel in all directions (rather than just to/from the west SB, and to/from the east NB). It would improve traffic operations of SR 99 north of the Battery Street Tunnel by eliminating side-street connections and consolidating access to a new interchange. It would also help to improve the connection between I-5 and SR 99.

E2m: WIDENED MERCER

General Functional Description

This concept proposes widening Mercer Street as it crosses under SR 99. SR 99 would remain two lanes each direction from the Battery Street Tunnel to Thomas Street where it becomes three lanes each direction. Mercer Street would becomes a two-way street with three lanes each direction and left turn lanes for a total width of seven lanes. Left turn off from SR 99 would be prohibited but right turns from and to SR 99 would be allowed at Harrison, Republican, and Roy Streets. Thomas Street would cross over SR 99 on a two-lane bridge providing

one lane in each direction. Broad Street would be closed from 5th Avenue to 8th Avenue.

Key Features

- Mercer Street becomes a two-way street
- Allows local street grid to be re-established
- Improves connectivity between primary routes (SR 99, Mercer Street, Roy Street)
- Accommodates traffic flow during AWV construction by utilizing Broad Street as a temporary detour for SB SR 99 traffic

Screening Results

This option will be carried forward for further evaluation in the EIS.

Along SR 99 north of the Battery Street Tunnel, this option would allow for reconfiguration of the adjacent street system into a regular grid, improving street connections and operations. This option may provide an advantage to traffic movement during AWV construction.

E2n: EXISTING MERCER WITH SIGNALS ON SR 99 NORTH OF THE BATTERY STREET TUNNEL

General Functional Description

This concept proposes to maintain the existing lanes on SR 99 and Mercer Street. SR 99 would remain three lanes each direction and Mercer Street would remain four lanes east bound. At-grade signalized intersections would be located at Harrison, Republican, and Roy streets. Left turns from SR 99 at these intersections would be prohibited. Thomas Street would intersect with SR 99, providing right turns to and from SR 99 only. Roy Street would become a three lane east bound street to compliment Mercer Street. Broad Street would be closed from 5th Avenue to 8th Avenue.

Key Features

- Mercer and Roy Streets become a one-way couplet.
- Adds three signalized intersections on SR 99
- Minimal construction duration
- Minimal disruption to local traffic
- Generally re-establishes local street grid
- Improves connectivity between primary routes (SR 99, Mercer Street, Roy Street)

Screening Results

This option will be carried forward for further evaluation in the EIS.

Along SR 99 north of the Battery Street Tunnel, this option would improve access between the street grid and SR 99 by allowing access to both NB and SB lanes from cross streets. In addition, this option would allow for reconfiguration of the adjacent street system into a regular street grid.

E3a: ADD SR 99 GRADE SEPARATION CROSSING BETWEEN S. ATLANTIC AND S. SPOKANE STREETS

General Functional Description

This concept for improving freight mobility proposes a grade-separated crossing of SR 99 for trucks between South Atlantic and South Spokane Streets. Additional data on freight demand are needed to justify investments.

Key Features

- Improves freight access
- Removes trucks from city streets; more effectively uses AWV corridor for freight

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.

E3b: ADD MISSING RAMPS AT S. SPOKANE ST./ ALASKAN WAY INTERCHANGE

General Functional Description

This concept would add missing ramps at the S. Spokane Street/Alaskan Way interchange. Additional data on freight demand are necessary to justify investments.

Key Features

- Improves freight access improvements
- Removes trucks from city streets; more effectively uses AWV Corridor for freight

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.

E3c: S.HANFORD ST. RAMPS TO/FROM SR 99 FOR GENERAL TRAFFIC / FREIGHT

General Functional Description

This concept proposes to add S. Hanford Street ramps for general traffic or freight access to/from NB SR 99. Additional data on freight demand are necessary to justify investments.

Key Features

- Improves freight access
- Removes trucks from city streets; more effectively uses AWV Corridor for freight

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.

E3d: IMPROVE EAST-WEST FREIGHT ACCESS BETWEEN S. SPOKANE ST. AND S. HOLGATE ST.

General Functional Description

Improved east-west freight access in the area between S. Spokane and S. Holgate Streets would occur under this concept. Additional data on freight demand would be necessary to justify investments.

Key Features

- Improves freight access
- Removes trucks from city streets; more effectively uses AWV corridor for freight

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.

E3e: IMPROVE BROAD STREET RAIL CROSSING

General Functional Description

This concept proposes improving the rail crossing at Broad Street.

Key Features

- Improves freight mobility
- Improves vehicular mobility
- Improves pedestrian and bicycle mobility

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This option has independent utility[12], and it will be constructed separately.

E3f: MOVE TRUCK CONTAINERS FROM WATERFRONT TO I-90

General Functional Description

This concept proposes to provide improved connections for movement of truck containers between the waterfront to I-90.

Key Features

- Further study required

[12] Independent utility is defined in FHWA November 5, 1993 guidance as being a usable and reasonable expenditure even if no additional transportation improvements in the area are made.

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.

E3g: INCORPORATE EXISTING RAILROAD TRACKS WITHIN THE CUT-AND-COVER TUNNEL

General Functional Description

This concept proposes to incorporate the existing railroad tracks within the new cut-and-cover tunnel. North of the railroad portal near Virginia Street, the rail line would be lowered to be combined with the cut-and-cover tunnel.

Key Features

Further study required.

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept is not directly related to the purpose of the project.

E4a: ADD FERRY TRAFFIC QUEUING AREA

General Functional Description

A queuing area for ferry traffic would be added within the existing AWV Corridor.

Key Features

- Could improve ferries operations
- Manages ferry traffic more effectively throughout the Corridor
- Accommodates anticipated future growth in ferries usage
- Complicates implementation of certain Viaduct replacement concepts

Screening Results

This option will be carried forward for further evaluation in the EIS.

If AWV design options limit possible locations for ferries queuing/holding, then ferry queuing/holding areas will be identified as mitigation in the EIS.

E4b: EXPAND PEDESTRIAN CONNECTIONS BETWEEN THE FERRY TERMINAL AND DOWNTOWN

General Functional Description

Pedestrian connections between the ferry terminals and the downtown core would be expanded.

Key Features

- Creates additional visual impacts along waterfront
- Provides additional connections for pedestrians, specifically those using the ferry system

Screening Results

This option will be carried forward for further evaluation in the EIS.

The concept of expanding pedestrian connections between the ferry terminal and downtown will be a component of all alternatives evaluated in the EIS in support of screening goals 5, 6, and 7.[13]

E4c: IMPROVE FERRY CONNECTIONS TO AWV CORRIDOR AND DOWNTOWN

General Functional Description

This concept would improve ferry connections to the AWV Corridor and downtown core.

Key Features

- Improves ferries operations
- Manages ferry traffic more effectively throughout the Corridor
- Would accommodate anticipated future growth in ferries usage

Screening Results

This option will be carried forward for further evaluation in the EIS.

[13] Goal 5 states that alternatives should maintain regional transportation linkages (specifically linkages to ferries). Goal 6 states that alternatives should support pedestrian accessibility. Goal 7 states that alternatives should be compatible with local transit, which includes ferries.

The concept of improving ferry connections between the ferry terminal and downtown will be a component of alternatives evaluated in the EIS in support of screening goals 5, 6, and 7.[14]

E5a: IMPROVE PEDESTRIAN ENVIRONMENT ALONG WATERFRONT

General Functional Description

This concept proposes to improve the pedestrian environment along the waterfront.

Key Features

- Improves connections and access for pedestrians
- Improves overall pedestrian environment, creating more opportunities and an improved pedestrian experience
- Consistent with city's downtown neighborhood plans and vision
- May cause traffic conflicts with some design options, particularly the surface roadway options

Screening Results

This option will be carried forward for further evaluation in the EIS.

The concept of improving pedestrian connections is being coupled with the urban design component of all alternatives evaluated in the EIS.

E5b: IMPROVE PEDESTRIAN CONNECTIONS BETWEEN WATERFRONT AND DOWNTOWN

General Functional Description

Under this concept, pedestrian connections between the waterfront and downtown core would be improved.

Key Features

- Improves connections and access for pedestrians
- Improves overall pedestrian environment, creating more opportunities and an improved pedestrian experience
- May cause additional visual impacts if pedestrian connections include aerial overpasses
- Consistent with City's downtown neighborhood plans and vision
- May cause traffic conflicts with some design options, particularly the surface roadway options

Screening Results

This option will be carried forward for further evaluation in the EIS.

The concept of improving pedestrian connections is being coupled with the urban design component of all alternatives evaluated in the EIS.

E5c: RETAIL, RESIDENTIAL, AND PUBLIC SPACE WITH AERIAL STRUCTURE

General Functional Description

Under this concept, retail, residential and/or public space would be combined with an aerial structure within the SR 99 right-of-way.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept not precluded by any of the aerial structure design options. An urban design plan incorporating public space will be presented for each alternative considered in the EIS. The EIS will not specifically analyze a design concept incorporating retail and residential space.

E5d: BUILD WATERFRONT PEDESTRIAN PARK WITH BUSINESSES

General Functional Description

Under this concept, a waterfront pedestrian park would be built and integrated with downtown businesses.

Key Features

- Further study required

Screening Results

This option has been dropped, and it will not be evaluated in the EIS for the following reason:

- This concept not precluded by any of the aerial structure design options. An urban design plan incorporating public space will be presented for each alternative considered in the EIS. The EIS will not specifically analyze a design concept incorporating retail and residential space.

CONCEPTS RECOMMENDED TO BE DROPPED FROM FURTHER CONSIDERATION

The following concepts have been dropped based on the screening criteria and will not be evaluated further in the project EIS.

A: AWV Improvements from S. Holgate Street to the Battery Street Tunnel

A1a: Retrofit Existing Double-Level Structure
A1c: Retrofit Existing Structure – Limited to Passenger Vehicles and Transit
A2a: Two-Level Aerial Replacement – West of Existing
A2c: Enclosed Two-Level Aerial Replacement – West of Existing Location
A3a[14]: One-Level Aerial with Six Lanes – Over Existing
A3b: One-Level Aerial with Six Lanes – West of Existing
A5b: Two-Level Cut-and-Cover Tunnel Concept under Alaskan Way
A6: Combine One-Level, One-Way Aerial with One-Way Surface Arterial
A7: One-Level, One-Way Tunnel and One-Level, One-Way Aerial
A8: One-Level, One-Way Tunnel and One-Way Surface Arterial
A11: Bored Tunnels under Alaskan Way

B: Battery Street Tunnel Improvements within the AWV Corridor

B2: Two-Level Cut-and-Cover Tunnel through Belltown
B3a: Bored or Mined Tunnel under Belltown
B3b: Bored or Mined Tunnels under Belltown

C: Roadway Improvements Outside of the AWV Corridor

C1a: Twin Bored Tunnels at Western Ave.
C1b: Twin Bored Tunnel Routes at 1st/2nd Ave.
C1c: Twin Bored Tunnels at 3rd Ave. (below bus tunnel)
C1d: Twin Bored Tunnel Routes at 4th/5th Ave. – East Portal
C1e: Twin Bored Tunnel Routes at 4th/5th Ave. – South Portal
C1f: Twin Bored Tunnel Route at I-5
C2: Signature Bridge Across Elliott Bay from West Seattle
C3: Elliott Bay Submerged Tunnel along Waterfront
C4: I-5 Improvements to Accommodate a Portion of SR 99 Demand

[14] Dropped in downtown waterfront segment of AWV Corridor from King Street to the Battery Street Tunnel

C5: Elliott Bay Floating Tunnel along Waterfront Area
C6: Signature Bridge from Stadium Area to Belltown via Elliott Bay
C7: Existing 4th Avenue BNSF Tunnel Transitioning to Cut-and-Cover Tunnel
C8a: Floating Bridge from Port of Seattle Property to Connect at Broad Street
C8b: Floating Bridge from Port of Seattle Property to Connect at Seneca Street

D: Multimodal Solutions

None of these options were recommended to be dropped

E: Related Improvements (Combine with other Concepts)

E1a: Add Missing Ramps at the S. Spokane St./Alaskan Way Interchange
E1c: Add New Access at the Downtown Core
E1e: Add S. Spokane Street Off-Ramp to 6th Avenue S. for Buses
E1f: Add S. Spokane Street Off-Ramp to 4th Avenue S.
E1g: Add Extension to the S. Spokane Street 4th Avenue On-Ramp
E1h: Provide Southbound Access to SR 99 from West Seattle Bridge
E2b: Extend Alaskan Way Viaduct Corridor to I-5 thru Mercer St. Corridor
E2c: Extend SR 520 to Alaskan Way Viaduct Corridor
E2d: Extend SR 99 Grade Separation over 1st Ave. S. Bridge to SR 509
E2f[15]: Improve I-90/SR 519/SR 99 Connections
E2g: Improve I-5/SR 99 Connection at S. Spokane Street
E2h: Improve Waterfront Access between the West Seattle Bridge and Battery Street
E2i: Locate Tunnel Portal at Roy Street to Reconnect Crossings at Thomas and Harrison
E2j: Add Off-Ramp to Airport Way
E2k: Re-utilize Battery Street Tunnel as a Vehicular Connection to Alaskan Way
E3a: Add SR 99 Grade Separation Crossing between S. Atlantic and S. Spokane Streets
E3b: Add Missing Ramps at S. Spokane St./Alaskan Way Interchange
E3c: S. Hanford St. Ramps to/from SR 99 for General Traffic/Freight
E3d: Improve East-West Freight Access between S. Spokane Street and S. Holgate Street
E3e: Improve Broad Street Rail Crossing
E3f: Move Truck Containers from Waterfront to I-90
E3g: Incorporate Existing Railroad Tracks within the Cut-and-Cover Tunnel
E5c: Retail, Residential, and Public Space with Aerial Structure
E5d: Build Waterfront Pedestrian Park with Businesses

[15] Improve I-90 connections is dropped, improve SR 519/SR 99 connections is carried forward

CONCEPTS RECOMMENDED TO BE CARRIED FORWARD

The following concepts are recommended to be carried forward for further evaluation in the project EIS.

A: AWV Improvements from S. Holgate Street to the Battery Street Tunnel

A1b: Retrofit Existing Single-Level Structure
A1d: Rebuild Existing Structure
A2b: Two-Level Aerial Replacement – Existing Location
A3a[16]: One-Level Aerial with Six Lanes – Over Existing
A4a: Multi-Lane Boulevard Surface Roadway
A4b: Multi-Lane Boulevard Surface Roadway with Sections of Tunnel and/or Overpasses
A5a: One-Level Cut-and-Cover Tunnel Under Alaskan Way
A9: Combine One-Level, Two-Way Bypass Tunnel With Two-Way Surface Arterial
A10: Combine Two-Way Bypass Aerial with Two-Way Surface Arterial

B: Battery Street Tunnel Improvements

B1a: Fire, Life and Safety Upgrade to the Existing Battery Street Tunnel
B1b: Seismic Upgrade to the Battery Street Tunnel

C: Roadway Improvements Outside of the AWV Corridor

None of these options are recommended to be carried forward

D: Multimodal Solutions

D1: Transportation System/Demand Management to Maximize Existing System
D2: High Capacity Transit along Existing AWV Corridor with New Concept

E: Related Improvements (Combine with Other Concepts)

*E1b: Improve Access at Stadium Area
E1d: Improve Access at Battery St./Western Ave./Elliott Ave.
*E2a: Add Connection to the South Lake Union Area
*E2e: Improve Ballard/Interbay Connections

[16] This option is being carried forward only in the southern section of the AWV Corridor.

E2f[17]: Improve I-90/SR 519/SR 99 Connections
E2l: Lowered Aurora/SR 99
E2m: Widened Mercer
E2n: Existing Mercer with Signals on SR 99 north of the Battery Street Tunnel
E4a: Add Ferry Traffic Queuing Area
E4b: Expand Pedestrian Connections between the Ferry Terminal and Downtown
E4c: Improve Ferry Connections to AWV Corridor and Dow ntown
E5a: Improve Pedestrian Environment along Waterfront
E5b: Improve Pedestrian Connections between Waterfront and Downtown

* These options have been "included", which means that the general concepts have been incorporated in one or more specific design options being carried forward for further analysis in the EIS.

[17] The I-90 Connections is dropped,.improve SR 519/SR 99 connections is carried forward

Appendix A: Design Concepts Developed in Phase 1 and Phase 2

DESIGN CONCEPTS DEVELOPED IN PHASE 1 AND 2

ROADWAY IMPROVEMENTS WITHIN THE EXISTING AWV CORRIDOR

- A1a: RETROFIT CONCEPT
- A1b: RETROFIT CONCEPT LIMITED TO PASSENGER VEHICLES AND TRANSIT
- A2a: TWO-LEVEL AERIAL REPLACEMENT – WEST OF EXISTING
- A2b: TWO-LEVEL AERIAL REPLACEMENT – EXISTING LOCATION
- A3a: ONE-LEVEL AERIAL WITH SIX LANES – OVER EXISTING
- A3b: ONE-LEVEL AERIAL WITH SIX LANES – WEST OF EXISTINGA
- A4a: MULTI-LANE BOULEVARD SURFACE ROADWAY
- A4b: MULTI-LANE BOULEVARD SURFACE ROADWAY WITH SECTIONS OF TUNNEL
- A5a: ONE-LEVEL CUT-AND-COVER TUNNEL UNDER ALASKAN WAY
- A5b: TWO-LEVEL CUT-AND-COVER TUNNEL UNDER ALASKAN WAY
- A6: COMBINE ONE-LEVEL ONE WAY AERIAL AND ONE WAY SURFACE ARTERIAL
- A7: COMBINE ONE-LEVEL ONE WAY TUNNEL AND ONE-LEVEL ONE WAY AERIAL
- A8: COMBINE ONE-LEVEL ONE WAY TUNNEL AND ONE WAY SURFACE ARTERIAL
- A9: BORED TUNNELS UNDER ALASKAN WAY

ROADWAY IMPROVEMENTS OUTSIDE OF THE AWV CORRIDOR

- B1a: TWIN BORED TUNNELS AT WESTERN AVE.
- B1b: TWIN BORED TUNNEL ROUTES AT 1ST AVE. AND 2ND AVE.
- B1c: TWIN BORED TUNNELS AT 3RD AVE.
- B1d: TWIN BORED TUNNEL ROUTES AT 4TH AVE. AND 5TH AVE. – EAST PORTAL
- B1e: TWIN BORED TUNNEL ROUTES AT 4TH AVE. AND 5TH AVE. – SOUTH PORTAL
- B1f: TWIN BORED TUNNEL ROUTE AT I-5
- B2: SIGNATURE BRIDGE ACROSS ELLIOTT BAY FROM WEST SEATTLE
- B3: ELLIOTT BAY SUBMERGED TUNNEL ALONG WATERFRONT AREA
- B4: I-5 IMPROVEMENTS TO ACCOMMODATE A PORTION OF SR-99 DEMAND

- B5: ELLIOTT BAY FLOATING TUNNEL ALONG WATERFRONT AREA
- B6: SIGNATURE BRIDGE FROM STADIUM AREA TO BELLTOWN VIA ELLIOTT BAY
- B7: EXISTING 4TH AVENUE BNSF TUNNEL TRANSITIONING TO CUT-AND-COVER TUNNEL
- B8a: FLOATING BRIDGE FROM PORT OF SEATTLE PROPERTY TO CONNECT AT BROAD STREET
- B8b: FLOATING BRIDGE FROM PORT OF SEATTLE PROPERTY TO CONNECT AT SENECA STREET

MULTIMODAL SOLUTIONS

- C1: TRANSPORTATION SYSTEM/DEMAND MANAGEMENT TO MAXIMIZE EXISTING SYSTEM
- C2: HCT ALONG EXISTING AWV CORRIDOR WITH NEW CONCEPT
- C3: HCT ALONG NEW AWV CORRIDOR WITH NEW CONCEPT

RELATED IMPROVEMENTS

- D1a: ADD MISSING RAMPS AT SOUTH SPOKANE ST. / ALASKAN WAY INTERCHANGE
- D1b: IMPROVE ACCESS AT STADIUM AREA
- D1c: ADD NEW ACCESS AT THE DOWNTOWN CORE
- D1d: IMPROVE ACCESS AT BATTERY ST. / WESTERN AVE. / ELLIOTT AVE.
- D1e: ADD SOUTH SPOKANE STREET OFF-RAMP TO 6TH AVENUE FOR BUSES
- D1f: ADD SOUTH SPOKANE STREET OFF-RAMP TO 4TH AVENUE SOUTH
- D1g: ADD EXTENSION TO THE SOUTH SPOKANE STREET 4TH AVENUE ON-RAMP
- D1h: PROVIDE SOUTHBOUND ACCESS TO SR 99 FROM WEST SEATTLE BRIDGE
- D2a: ADD CONNECTION TO SOUTH LAKE UNION AREA
- D2b: EXTEND ALASKAN WAY CORRIDOR TO I-5 THRU MERCER ST. CORRIDOR
- D2c: EXTEND SR 520 TO ALASKAN WAY CORRIDOR
- D2d: EXTEND SR 99 GRADE SEPARATION OVER 1ST AVE. S. BR. TO SR 509
- D2e: IMPROVE BALLARD / INTERBAY CONNECTIONS
- D2f: IMPROVE I-90/SR 519 / SR 99 CONNECTIONS
- D2g: IMPROVE I-5 / SR 99 CONNECTION AT SOUTH SPOKANE STREET

- D2h: IMPROVE WATERFRONT ACCESS BETWEEN THE WEST SEATTLE BRIDGE AND BATTERY STREET
- D2i: LOCATE TUNNEL PORTAL AT ROY STREET TO RECONNECT CROSSINGS AT THOMAS AND HARRISON
- D2j: ADD OFF-RAMP TO AIRPORT WAY
- D2k: RE-UTILIZE BATTERY STREET TUNNEL AS A VEHICULAR CONNECTION TO ALASKAN WAY
- D3a: SR 99 GRADE SEPARATION CROSSING BETWEEN ATLANTIC AND SOUTH SPOKANE STREETS
- D3b: ADD MISSING RAMPS AT SOUTH SPOKANE ST. / ALASKAN WAY INTERCHANGE
- D3c: SOUTH HANFORD ST. RAMPS TO/FROM SR 99 FOR GENERAL TRAFFIC / FREIGHT
- D3d: IMPROVE EAST-WEST FREIGHT ACCESS BETWEEN SOUTH SPOKANE ST. AND SOUTH HOLGATE ST.
- D3e: IMPROVE BROAD STREET RAIL CROSSING
- D3f: MOVE TRUCK CONTAINERS FROM WATERFRONT TO I-90
- D3g: INCORPORATE EXISTING RAILROAD TRACKS WITHIN THE CUT-AND-COVER TUNNEL
- D4a: ADD FERRY TRAFFIC QUEUING AREA ON EXISTING ALASKAN WAY S
- D4b: EXPAND PEDESTRIAN CONNECTION BETWEEN FERRY TERMINAL AND DOWNTOWN
- D4c: IMPROVE FERRY CONNECTION TO AWV CORRIDOR AND DOWNTOWN
- D5a: IMPROVE PEDESTRIAN ENVIRONMENT ALONG WATERFRONT
- D5b: IMPROVE PEDESTRIAN CONNECTION BETWEEN WATERFRONT AND DOWNTOWN
- D5c: RETAIL, RESIDENTIAL, AND PUBLIC SPACE WITH AERIAL STRUCTURE
- D5d: BUILD WATERFRONT PEDESTRIAN PARK WITH BUSINESS

Appendix B: Screening Evaluation Table

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 1 - An alternative must provide facilities that meet current seismic design standards[1].		
A. Meets Current Seismic Standards	An alternative meets the current WSDOT and AASHTO seismic design standards.	Note the characteristic(s) of an alternative that appear seismically vulnerable.
B. Improves Integrity of Seawall	An alternative must improve the structural integrity of the existing Alaskan Way Seawall.	Note alternatives where structural improvements to the existing seawall are not proposed or would be precluded. Note areas (if any) where proposed seawall improvements would meet less stringent seismic standards than improvements for the roadway facility.

[1] Goals 1 and 2 must be met for any design concept to be advanced. If it does not meet goals 1 and 2, it will be dropped from consideration without further evaluation.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 2 – An alternative must maintain the current transportation functions of the Alaskan Way Viaduct Corridor[1].		
A. Transportation Functions	An alternative must maintain transportation-related functions including movement of people, freight, and goods to and from the central downtown core; between manufacturing and industrial centers, and through traffic on SR 99.	Note the transportation functions that cannot be provided by an alternative. Specifically the movement of people, freight, and goods. • To and from downtown • Between the Duwamish industrial area and Ballard/Interbay • Through downtown

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 3 – An alternative should not further degrade the operation of other major transportation facilities.		
A. Major Transportation Facilities	An alternative should not further degrade the operation of other major transportation facilities. An alternative could include the possibility of additional transit service and the use of TDM/TSM measures to maintain mobility.	List the location(s) where an alternative would cause degradation in operations and describe the magnitude of that impact to existing major transportation facilities.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 4 – An alternative should improve traffic safety.		
A. Roadway Design Standards	An alternative should improve traffic safety by meeting WSDOT approved roadway design standards for lane widths, shoulder widths, and ramps.	List the location(s) where an alternative does not meet roadway design standards and briefly describe the safety implications of not meeting the standards.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 5 – An alternative should maintain regional transportation linkages.		
A. Regional Transportation Projects	An alternative should integrate functionally with other transportation projects currently underway or planned. Planned projects may include SR 519, Spokane Street Viaduct Widening Project, and SR 509.	List the transportation system project(s) that are precluded or restricted.
B. Regional Linkages	An alternative should maintain existing regional linkages to I-5, SR 520, and the Mercer Corridor.	List the transportation system linkages that are precluded or restricted.
C. Ferry System Access	An alternative must maintain vehicular and pedestrian access to the ferry system.	Note how vehicular and pedestrian access to the ferry system would be precluded or restricted by an alternative.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 6 – An alternative should support bicycle and pedestrian accessibility and mobility.		
A. Pedestrian Accessibility and Mobility	An alternative should allow pedestrian movement between the waterfront, downtown core, stadiums, and Pike Place Market area.	Note areas in listed locations where pedestrian movement would be substantially impeded or precluded.
B. Bicycle Accessibility and Mobility	An alternative should allow bicycle travel along the corridor with connections to bicycle routes.	Note areas along the corridor where bicycle travel would be substantially impeded or precluded.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 7 – An alternative should be compatible with local, express, and high-capacity transit.		
A. Transit Access	An alternative should support access for transit to and from the corridor with connections to multiple transit modes.	List areas where an alternative does not support transit access.
B. Transit Compatibility	An alternative should be compatible with plans for local, express, and high capacity transit.	List areas where an alternative would not be compatible with plans for local, express, and high capacity transit.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 8 – An alternative should support land use and shoreline plans and policies pertaining to development of the downtown Seattle waterfront.		
A. Land Use and Shoreline Plans	An alternative should support land use and shoreline plans and policies related to the downtown urban waterfront.	List and briefly describe areas that are not compatible with existing land use and shoreline plans and policies.
B. Waterfront Connections	An alternative should allow for expanded visual, physical, and aesthetic connections between downtown Seattle and the waterfront.	List areas where expanded visual, physical, and aesthetic connections would be precluded.
C. Public Access	An alternative should maintain or improve public access to and along the waterfront.	List and briefly describe area(s) where continued development of the waterfront for public access would be inhibited.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 9 – An alternative should support improved habitat for fish and wildlife along the Alaskan Way Seawall.		
A. Marine and Intertidal Habitat	An alternative should support improved habitat in the marine and intertidal environment.	Briefly describe how an alternative could inhibit or preclude habitat improvements.

ALASKAN WAY VIADUCT AND SEAWALL PROJECT

SCREENING CRITERIA EVALUATION TABLE

EVALUATION INDICATOR	EVALUATION CRITERIA	EVALUATION METHOD
GOAL 10 – An alternative should rely on proven construction methods, minimize construction duration, and promote effective traffic management during construction.		
A. Construction Time	An alternative should minimize the construction timeframe.	List and briefly describe the area(s) where the length of construction time appears to have a severe impact.
B. Construction Methods	An alternative should rely on proven construction methods to avoid or minimize construction risks.	List and briefly describe the area(s) where adverse construction risks appear particularly severe.
C. Traffic Management	An alternative should promote effective traffic management within the corridor during construction.	List and briefly describe the area(s) where adverse traffic management impacts appear particularly severe.

Appendix C: Screening Results Table

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A. AWV IMPROVEMENTS FROM S. HOLGATE STREET TO THE BATTERY STREET TUNNEL			
A1a	Retrofit Existing Double-Level Structure	DROPPED	Justification: ➢ An April 2003 report entitled *Rebuild/Retrofit 500, 500-Year Design Earthquake*, written by Parsons, Brinckerhoff, Quade, & Douglas, Inc. compares the retrofit and rebuild design concepts for a current standard design level earthquake. The comparison clearly demonstrated that the rebuild design option for the double-level structure from S. Holgate Street to Pike Street is superior to retrofitting the existing double-level structure when seismic performance, aesthetics, cost, and risk are balanced. Therefore, the project purpose and screening criteria goals are better met with Rebuild option A1d, Rebuild Existing Structure.
A1b	Retrofit Existing Single-Level Structure	CARRIED FORWARD	

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A1c	Retrofit Existing Structure - Limited to Passenger Vehicles and Transit	DROPPED	Justification: ➢ Goal 2 – This option would create unbalanced access between freight, passenger, and vehicular traffic. It would limit linkages for freight traffic traveling to and from Downtown, through Downtown, and between the Duwamish industrial area and Ballard/Interbay area. ➢ An April 2003 report entitled *Rebuild/Retrofit 500, 500-Year Design Earthquake*, written by Parsons, Brinckerhoff, Quade, & Douglas, Inc. compares the retrofit and rebuild design concepts for a current standard design level earthquake. The comparison clearly demonstrated that the rebuild design option for the double-level structure from S. Holgate Street to Pike Street is superior to retrofitting the existing double-level structure when seismic performance, aesthetics, cost, and risk are balanced. Therefore, the project purpose and screening criteria goals are better met with Rebuild option A1d, Rebuild Existing Structure.
A1d	Rebuild Existing Structure	CARRIED FORWARD	

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A2a	Two-Level Aerial Replacement – West of Existing	DROPPED	Justification: ➢ Goal 8 – This option would move visual impacts of the Viaduct structure closer to the waterfront, which would not be compatible with existing land use and shoreline plans. ➢ The intent of this design concept and the project purpose and screening criteria goals are better met with Aerial options A1d, Rebuild Existing Structure or A2b, Two-Level Aerial Replacement – Existing Location. These options are being carried forward for further evaluation in the EIS.
A2b	Two-Level Aerial Replacement – Existing Location	CARRIED FORWARD	

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A2c	Enclosed Two-Level Aerial Replacement – West of Existing Location	DROPPED	Justification: ➢ Goal 8 – This option would move visual impacts of the Viaduct structure closer to the waterfront and the enclosed structure would approximately nine stories (90 feet) in height. This design option would not allow for improved visual, physical, and aesthetic connections between downtown and the waterfront, and would not be compatible with existing land use and shoreline plans. ➢ Goal 10 – Construction techniques for this structure are unknown and state-of-the-art, increasing overall project risk. In addition, it is unknown whether or not this option is technically feasible to properly engineer for fire, life, and safety risks. Long-term operations and maintenance of the enclosed structure is also a concern. ➢ The project purpose and screening criteria goals are better met with options A1d, Rebuild Existing Structure; A2b, Two-Level Aerial Replacement – Existing Location; A5a, One-Level Cut-and Cover Tunnel; or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These options are being carried forward for further evaluation in the EIS.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A3a	One-Level Aerial with Six Lanes – Over Existing	CARRIED FORWARD IN SOUTH END ONLY	Justification: This option is carried forward for only the south end of the project area from S. Holgate Street to King Street. In the downtown waterfront segment from King Street to the Battery Street Tunnel, this option has been dropped for the following reasons. ➢ Goal 8 – In the downtown waterfront portion of the project area, the existing waterfront view corridor would be substantially impacted by this design option due to the width required for a one-level structure. This would not be consistent with existing land use and shoreline plans, and would not allow for improved visual, physical, and aesthetic connections between downtown and the waterfront. However, from S. Holgate Street to S. Royal Brougham Way, views are not as sensitive due to industrial land uses, therefore, in this segment of the project area, a single-level structure would be feasible. ➢ In the downtown waterfront area, the project purpose and screening criteria goals are better met by options A1d, Rebuild Existing Structure or A2b, Two-Level Aerial Replacement – Existing Location. However, this option meets the screening criteria goals for the southern portion of the project area, thus for the southern portion of the project area it will be carried forward in the EIS.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A3b	One-Level Aerial with Six Lanes – West of Existing	DROPPED	Justification: *South End of Project Area* ➢ From S. Holgate Street to approximately King Street, this option would require the purchase and relocation of railroad facilities and Port of Seattle Property. The acquisition and/or displacement of these activities would not be required by option A3a, One-Level Aerial with Six Lanes- Over Existing. Therefore, in the southern section of the project area the intent of this design concept and the project purpose and screening criteria goals are better met by option A3a. *Central Portion of Project Area* ➢ Goal 8 – From King Street to the Battery Street Tunnel the existing waterfront view corridor would be substantially impacted by this design option due to the width required for a one-level structure. This would not be consistent with existing land use and shoreline plans, and would not allow for improved visual, physical, and aesthetic connections between downtown and the waterfront. ➢ In the downtown waterfront area, the project purpose and screening criteria goals are better met by options A1d, Rebuild Existing Structure or A2b, Two-Level Aerial Replacement – Existing Location.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A4a	Multi-Lane Boulevard Surface Roadway	CARRIED FORWARD	
A4b	Multi-Lane Boulevard Surface Roadway with Sections of Tunnel and/or Overpasses	CARRIED FORWARD	
A5a	One-Level Cut-and-Cover Tunnel Under Alaskan Way	CARRIED FORWARD	
A5b	Two-Level Cut-and-Cover Tunnel Concept under Alaskan Way	DROPPED	Justification: ➢ Goal 10 – This option carries more construction risk than option A5a, One-Level Cut-and-Cover Tunnel because deeper underground tunnel construction would be required. In addition, traffic management during construction would be more difficult with this option as compared with option A5a. ➢ The intent of this design concept and the project purpose and screening criteria goals can be better met by option A5a, One-Level Cut-and-Cover Tunnel.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A6	Combine One-Level, One-Way Aerial with One-Way Surface Arterial	DROPPED	Justification: ➢ This option would provide unbalanced access and travel times between northbound and southbound traffic. The direction of traffic traveling on the surface arterial would have increased travel times, but more downtown access through surface street connections. The direction of traffic traveling on the aerial structure would have fewer possible downtown access points, but travel times would be comparable to existing conditions. The intent of this design concept and the project purpose and screening criteria goals can be better met by other design options such as A2b, Two-Level Aerial Replacement – Existing Location and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial.
A7	Combine One-Level, One-Way Tunnel and One-Level, One-Way Aerial	DROPPED	Justification: ➢ The intent of this design concept and the project purpose and screening criteria goals can be better met by other design options such as A2b, Two-Level Aerial Replacement – Existing Location; A5a, One-Level Cut-and Cover Tunnel; and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A8	Combine One-Level, One-Way Tunnel and One-Way Surface Arterial	DROPPED	Justification: ➢ This option would provide unbalanced access and travel times between northbound and southbound traffic. The direction of traffic traveling on the surface arterial would likely have increased travel times, but more downtown access through surface street connections. The direction of traffic traveling in the tunnel would have fewer possible access points to the waterfront, downtown and Ballard/Interbay, but travel times would likely be comparable to existing conditions. The intent of this design concept and the project purpose and screening criteria goals can be better met by other design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial.
A9	Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial	CARRIED FORWARD	
A10	Combine a Two-Way Bypass Aerial with a Two-Way Surface Arterial	CARRIED FORWARD	

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
A11	Bored Tunnels under Alaskan Way	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ In addition to construction risk, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
B. BATTERY STREET TUNNEL IMPROVEMENTS WITHIN THE AWV CORRIDOR			
B1a	Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel	CARRIED FORWARD	
B1b	Seismic Upgrade to the Existing Battery Street Tunnel	CARRIED FORWARD	
B2	Two-Level Cut-and-Cover Tunnel through Belltown	DROPPED	Justification: ➢ Goal 10 – The risk of constructing a cut-and-cover tunnel through Belltown would be high because the width of the tunnel would come very close to existing footings of both historic and high-rise buildings. ➢ This concept is dropped because conceptual engineering analysis of this option revealed that it would cost more to build a new Battery Street Tunnel than what could reasonably be funded in the foreseeable future. Therefore, the project purpose and screening criteria goals can be better met by the No Action option to continue utilizing the Battery Street Tunnel; option B1a, Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel; and/or option B1b Seismic Upgrade to the Existing Battery Street Tunnel.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
B3a	Bored or Mined Tunnel Under Belltown	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored or mined tunnels would be high, due to the size of the tunnels required to accommodate 3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ This concept is dropped because conceptual engineering analysis of this option revealed that it would cost more to build a new Battery Street Tunnel than what could reasonably be funded in the foreseeable future. Therefore, the project purpose and screening criteria goals can be better met by the No Action option to continue utilizing the Battery Street Tunnel; option B1a, Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel; and/or option B1b Seismic Upgrade to the Existing Battery Street Tunnel.
B3b	Bored or Mined Tunnels Under Belltown	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored or mined tunnels would be high, due to the size of the tunnels required to accommodate 3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ This concept is dropped because conceptual engineering analysis of this option revealed that it would cost more to build a new Battery Street Tunnel than what could reasonably be funded in the foreseeable future. Therefore, the project purpose and screening criteria goals can be better met by the No Action option to continue utilizing the Battery Street Tunnel; option B1a, Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel; and/or option B1b Seismic Upgrade to the Existing Battery Street Tunnel.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C. ROADWAY IMPROVEMENTS OUTSIDE OF THE AWV CORRIDOR			
C1a	Twin Bored Tunnels at Western Ave.	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ In addition to construction risk, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C1b	Twin Bored Tunnel Routes at 1ST and 2ND Ave.	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ In addition to construction risk, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C1c	Twin Bored Tunnels at 3RD Ave (below bus tunnel)	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C1d	Twin Bored Tunnel Routes at 4TH and 5TH Ave. - East Portal	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C1e	Twin Bored Tunnel Routes at 4TH and 5TH Ave. - South Portal	DROPPED	Justification: ➢ Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, the intent of this design concept and the project purpose and screening criteria goals can be better met by design options A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C1f	Twin Bored Tunnel Route at I-5	DROPPED	Justification: ➢ Goal 2 - This concept would not maintain the current transportation functions of the AWV Corridor, nor would it meet the travel demand currently served by the AWV Corridor. This option would eliminate existing access for through traffic traveling between the Duwamish industrial area and Ballard/Interbay. ➢ Goal 10 – The risk of constructing bored tunnels would be high, due to the size of the tunnels required to accommodate 2-3 lanes in each direction with shoulders. The width of such tunnels would likely exceed the size of any bored tunnels constructed in the United States. ➢ In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option. Conceptual engineering of this option has shown that the cost to build both a new Seawall and the bored tunnels is greater than what could reasonable be funded in the foreseeable future. Therefore, intent of this design concept and the project purpose and screening criteria goals can be better met by other design options such as A5a, One-Level Cut-and Cover Tunnel and/or A9, Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial. These design options address the seismic deficiencies of both the Viaduct and Seawall with fewer risks and lower costs than a bored tunnel concept.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C2	Signature Bridge Across Elliott Bay from West Seattle	DROPPED	Justification: ➢ Goal 2 – This option would only provide service to/from West Seattle, and would not serve communities to the north and south of Seattle. Therefore, this option would not maintain the transportation functions within the AWV Corridor. ➢ Goal 3 – Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a bridge. ➢ Goal 5– The AWV Corridor would lose some linkages with SR 520, and the Mercer Corridor. ➢ Goal 8 - The existing waterfront view corridor would be substantially impacted if a new bridge across Elliott Bay were constructed. This would not be consistent with existing land use and shoreline plans. ➢ Goal 9 – A signature bridge across Elliott Bay would create additional overwater shading, which would reduce fish and wildlife habitat. ➢ In addition, the submerged tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C3	Elliott Bay Submerged Tunnel along Waterfront Area	DROPPED	Justification: ➢ Goal 3 – Marine transportation in the Port of Seattle and Washington State Ferry Terminal would be degraded by the addition of a submerged tunnel along the waterfront. ➢ Goal 5 – Ferry system access would be restricted. ➢ Goal 9 – Submerged tunnel construction and long-term operation would reduce overall fish and wildlife habitat. ➢ Goal 10 – Requires complicated, high-risk construction methods for deep water tunnel construction ➢ In addition, the submerged tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C4	I-5 Improvements to Accommodate a Portion of SR 99 Demand	DROPPED	Justification ➢ Goal 2 – This option would not maintain the transportation functions within the AWV Corridor that provide for the movement of people, freight, and goods traveling to and from downtown, between the Duwamish industrial area and Ballard/Interbay, and through downtown. ➢ In addition, this concept would not meet the project purpose and need. It would not address the seismic deficiencies of the existing Seawall and Viaduct unless paired with separate Viaduct and Seawall options.
C5	Elliott Bay Floating Tunnel along Waterfront Area	DROPPED	Justification: ➢ Goal 3 – Marine transportation in the Port of Seattle and Washington State Ferry Terminal would be degraded by the addition of a submerged tunnel along the waterfront. ➢ Goal 9 – Floating tunnel construction and long-term operation would reduce fish and wildlife habitat. ➢ Goal 10 – Requires complicated, high-risk construction methods for deep water tunnel construction ➢ In addition, the bored tunnel concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C6	Signature Bridge from Stadium Area to Belltown via Elliott Bay	DROPPED	Justification: ➢ Goal 3 – Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a bridge. ➢ Goal 8 - The existing waterfront view corridor would be substantially impacted if a new bridge across Elliott Bay were constructed. This would not be consistent with existing land use and shoreline plans. ➢ Goal 9 – Construction and long-term operation of a bridge over Elliott Bay would create overwater shading, which would reduce fish and wildlife habitat. ➢ In addition, this concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.
C7	Existing 4th Avenue BNSF Tunnel Transitioning to Cut-and-Cover Tunnel	DROPPED	Justification: ➢ Goal 2 – This option would restrict the transport of BNSF freight throughout the AWV Corridor. The existing BNSF tunnel is constrained, and it is likely that transportation functions currently provided by the AWV Corridor would not be maintained. ➢ Goal 3 - Operations of the BNSF Railroad would be degraded by this option, and tunnel capacity is constrained. ➢ In addition, this concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
C8a	Floating Bridge from Port of Seattle Property to Connect at Broad Street	DROPPED	Justification: ➢ Goal 3 - Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a floating bridge. ➢ Goal 5 – Ferry system access would be restricted. ➢ Goal 9 – Construction and long-term operation of a floating bridge along Elliott Bay would reduce fish and wildlife habitat. ➢ In addition, this concept would not address the seismic deficiencies of the existing Seawall unless it is paired with a separate Seawall option.
C8b	Floating Bridge from Port of Seattle Property to Connect at Seneca Street	DROPPED	Justification: ➢ Goal 3 - Marine transportation in the Port of Seattle and at the Washington State Ferry Terminal would be degraded by the addition of a floating bridge. ➢ Goal 5 – Ferry system access would be restricted. ➢ Goal 9 – Construction and long-term operation of a floating bridge along Elliott Bay would reduce fish and wildlife habitat. ➢ In addition, this concept would not address the seismic deficiencies of the existing Seawall and the Viaduct north of Seneca unless it is paired with additional design options.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
D. MULTIMODAL SOLUTIONS			
D1	Transportation System/Demand Management (TSM/TDM) to Maximize Existing System	CARRIED FORWARD	Discussion: ➢ TSM/TDM measures are being carried forward as components of all alternatives being evaluated in the EIS. An additional description of the range of TSM/TDM measures are contained in the December 2002 document entitled *Draft Flexible Transportation Package: An Integrated Program of Demand and System Management Strategies*, written by Parsons, Brinckerhoff, Quade, and Douglas, Inc.
D2	High Capacity Transit along Existing AWV Corridor with New Concept	CARRIED FORWARD	Discussion: ➢ Increased transit will be considered as part of the alternatives being evaluated in the EIS. An additional description of the range of transit measures that will be incorporated are contained in the December 2002 document entitled *Draft Flexible Transportation Package: An Integrated Program of Demand and System Management Strategies*, written by Parsons, Brinckerhoff, Quade, and Douglas, Inc.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E. RELATED IMPROVEMENTS (WOULD BE COMBINED WITH OTHER CONCEPTS)			
E1	Access Improvement Concepts		
E1a	Add Missing Ramps at the S. Spokane St./Alaskan Way Interchange	DROPPED	Justification: ➢ This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.
E1b	Improve Access at Stadium Area	INCLUDED[1]	Discussion: ➢ Existing access to the Viaduct is currently limited at the Stadium Area to a northbound on-ramp at Railroad Way S. Options to improve Stadium area access are related to design option E2f, Improve I-90/SR 519/SR 99 Connections, which is supported by screening criteria Goal 5[2]
E1c	Add New Access at the Downtown Core	DROPPED	Justification: ➢ This option is not directly related to the purpose of the project. Most of the downtown; however, design options that would preclude additional design options would not preclude new access into access into downtown (such as design option A5a, One-Level Cut-and-Cover Tunnel Under Existing Alaskan Way) will be disclosed in the EIS.

[1] For the purposes of this screening process the term "included" means that the general concept has been incorporated in one or more specific design options being carried forward for further analysis in the EIS. The discussion section describes the specific design options where the concept has been incorporated.
[2] Goal 5 requires the project to maintain regional transportation linkages. Specifically, Goal 5 states that an alternative should integrate functional with planned transportation projects such as SR 519.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E1d	Improve the Access at Battery St./Western Ave./ and Elliott Ave.	CARRIED FORWARD	Discussion: ➢ The existing ramps at Battery Street/Western Avenue/and Elliott Avenue are nonstandard and have safety deficiencies. Options to improve these deficiencies are supported by screening criteria Goal 4[3] and will be incorporated where feasible into design plans carried forward into the EIS. See also concept E2e, Improve Ballard/Interbay Connections and E3e, Improve Broad Street Rail Crossing.
E1e	Add S. Spokane Street Off-Ramp to 6th Avenue S. for Buses	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.
E1f	Add S. Spokane Street Off-Ramp to 4th Avenue S.	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.
E1g	Add Extension to the S. Spokane Street 4th Avenue On-Ramp	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.
E1h	Provide Southbound Access to SR 99 from West Seattle Bridge	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

[3] Goal 4 states that the project should improve traffic safety.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E2	Regional Connection Concepts		
E2a	Add Connection to South Lake Union Area	INCLUDED[4]	Discussion: ➢ The option to add or improve connections to the South Lake Union Area north of the Battery Street Tunnel will be included into specific design options being carried forward into the EIS. These specific design options include E21, Lowered Aurora/SR 99; E2m, Widened Mercer; and E2n, Existing Mercer with Signals on SR 99 North of the Battery Street Tunnel.
E2b	Extend Alaskan Way Viaduct Corridor to I-5 thru Mercer St. Corridor	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.
E2c	Extend SR 520 to Alaskan Way Viaduct Corridor	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.
E2d	Extend SR 99 Grade Separation over 1st Ave. S. Bridge to SR 509	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

[4] For the purposes of this screening process the term "included" means that the general concept has been incorporated in one or more specific design options being carried forward for further analysis in the EIS. The discussion section describes the specific design options where the concept has been incorporated.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E2e	Improve Ballard / Interbay Connections	INCLUDED[5]	Discussion: ➢ The existing ramps providing the Ballard/Interbay connection are located at Western Avenue and Elliott Avenue. These ramps are nonstandard and have safety deficiencies. Options to improve these deficiencies are supported by screening criteria Goal 4[6] and will be incorporated where feasible into design plans carried forward into the EIS. Specifically, this concept is incorporated into design option E1d, Improve the Access at Battery Street/Western Avenue/ and Elliott Avenue.
E2f	Improve I-90 / SR 519 / SR 99 Connections	I-90 Connections DROPPED SR 519 Connections CARRIED FORWARD	Discussion: ➢ The concept of improving the connections between SR 99 and I-90 and between I-90 and SR 519 is not precluded; however, it is not related to the purpose of the project. ➢ The concept of improving the connection between SR 99 and SR 519 is supported by Goal 5[7] of the screening criteria and is being incorporated into design options being carried forward into the EIS.
E2g	Improve I-5 / SR 99 Connection at S. Spokane Street	DROPPED	Justification: ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project.

[5] For the purposes of this screening process the term "included" means that the general concept has been incorporated in one or more specific design options being carried forward for further analysis in the EIS. The Discussion section describes the specific design options where the concept has been incorporated.
[6] Goal 4 states that the project should improve traffic safety.
[7] Goal 5 requires the project to maintain regional transportation linkages. Specifically, Goal 5 states that an alternative should integrate functional with planned transportation projects such as SR 519.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E2h	Improve Waterfront Access between the West Seattle Bridge and Battery Street	DROPPED	Justification ➢ This option is not precluded, but is dropped because it is not directly related to the purpose of the project. However, the intent of all of the options being carried forward is to improve waterfront access, where feasible, to and from downtown and along the waterfront.
E2i	Locate Tunnel Portal at Roy Street to Reconnect Crossings at Thomas and Harrison	DROPPED	Justification ➢ This concept requires the construction of a new tunnel to replace the Battery Street Tunnel, which is an option that has been dropped because the option to continue utilizing the Battery Street Tunnel accomplishes a similar goal as constructing a new tunnel with fewer risks and lower costs. Conceptual engineering analysis of this option revealed that it would cost more than what could reasonably be funded in the foreseeable future.
E2j	Add Off-Ramp to Airport Way	DROPPED	Justification ➢ This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.
E2k	Re-utilize Battery Street Tunnel as a Vehicular Connection to Alaskan Way (assumes new tunnel replaces the Battery Street Tunnel)	DROPPED	Justification ➢ This option has been dropped because the current project proposes to use the existing Battery Street Tunnel as part of any alternative to be evaluated in the EIS. This design concept was originally developed as an alternative use to the existing Battery Street Tunnel if a new tunnel under Belltown were created as part of the project. Conceptual engineering analysis of this option to construct a new Battery Street Tunnel revealed that it would cost more than what could reasonably be funded in the foreseeable future; therefore, this design option has been dropped.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E2l	Lowered Aurora/SR 99	CARRIED FORWARD	Discussion: ➢ This concept would provide access along SR 99 north of the Battery Street Tunnel in all directions (rather than just to/from the west southbound, and to/from the east northbound). It would improve traffic operations of SR 99 north of the Battery Street Tunnel by eliminating side-street connections and consolidating access to a new interchange. It would also help to improve the connection between I-5 and SR 99.
E2m	Widened Mercer	CARRIED FORWARD	Discussion: ➢ Along SR 99 north of the Battery Street Tunnel, this option would allow for reconfiguration of the adjacent street system into a regular grid, improving street connections and operations. This option may provide an advantage to traffic movement during AWV construction.
E2n	Existing Mercer with Signals on SR 99 north of the Battery Street Tunnel	CARRIED FORWARD	Discussion: ➢ Along SR 99 north of the Battery Street Tunnel, this option would improve access between the street grid and SR 99 by allowing access to both northbound and southbound lanes from cross streets. In addition, this option would allow for reconfiguration of the adjacent street system into a regular street grid.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E3	Freight Improvement Concepts		
E3a	Add SR 99 Grade Separation Crossing Between S. Atlantic and S. Spokane Streets	DROPPED	Justification ➢ This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.
E3b	Add Missing Ramps at S. Spokane St./Alaskan Way Interchange	DROPPED	Justification ➢ This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.
E3c	S. Hanford St. Ramps to/from SR 99 for General Traffic/Freight	DROPPED	Justification ➢ This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.
E3d	Improve East - West Freight Access between S. Spokane Street and S. Holgate Street	DROPPED	Justification ➢ This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.
E3e	Improve Broad Street Rail Crossing	DROPPED	Justification: ➢ This option has independent utility[8], and it will be constructed separately.

[8] Independent utility is defined in FHWA November 5, 1993 guidance as being a usable and reasonable expenditure even if no additional transportation improvements in the area are made

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E3f	Move Truck Containers from Waterfront to I-90	DROPPED	Justification: ➢ This concept is not precluded, but is dropped because it is not directly related to the purpose of the project.
E3g	Incorporate Existing Railroad Tracks within the Cut-and-Cover Tunnel	DROPPED	Justification: ➢ This concept is not directly related to the purpose of the project.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E4	Ferry Access Improvement Concepts		
E4a	Add Ferry Traffic Queuing Area	CARRIED FORWARD	Discussion: ➢ If AWV design options limit possible locations for ferries queuing/holding, then ferry queuing/holding areas will be identified as mitigation in the EIS.
E4b	Expand Pedestrian Connections between the Ferry Terminal and Downtown	CARRIED FORWARD	Discussion: ➢ The concept of expanding pedestrian connections between the ferry terminal and downtown will be a component of all alternatives evaluated in the EIS in support of screening goals 5, 6, and 7[9].
E4c	Improve Ferry Connections to AWV Corridor and Downtown	CARRIED FORWARD	Discussion: ➢ The concept of improving ferry connections between the ferry terminal and downtown will be a component of alternatives evaluated in the EIS in support of screening goals 5, 6, and 7[9].

[9] Goal 5 states that alternatives should maintain regional transportation linkages (specifically linkages to ferries). Goal 6 states that alternatives should support pedestrian accessibility. Goal 7 states that alternatives should be compatible with local transit, which includes ferries.

SCREENING RESULTS TABLE

CONCEPT		STATUS	COMMENTS
NO.	DESCRIPTION		
E5	Urban Design Concepts		
E5a	Improve Pedestrian Environment Along Waterfront	CARRIED FORWARD	Discussion: ➢ The concept of improving pedestrian connections is being coupled with the urban design component of all alternatives evaluated in the EIS.
E5b	Improve Pedestrian Connections between Waterfront and Downtown	CARRIED FORWARD	Discussion: ➢ The concept of improving pedestrian connections is being coupled with the urban design component of all alternatives evaluated in the EIS.
E5c	Retail, Residential, and Public Space with Aerial Structure	DROPPED	Justification: ➢ This concept not precluded by any of the aerial structure design options. An urban design plan incorporating public space will be presented for each alternative considered in the EIS. The EIS will not specifically analyze a design concept incorporating retail and residential space.
E5d	Build Waterfront Pedestrian Park with Businesses	DROPPED	Justification: ➢ This concept not precluded by any of the aerial structure design options. An urban design plan incorporating public space will be presented for each alternative considered in the EIS. The EIS will not specifically analyze a design concept incorporating retail and residential space.

Appendix D: Screening Results Summary Table

Alaskan Way Viaduct and Seawall Replacement Project
Screening Results Summary Table

	Concept	In EIS	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9	Goal 10	Other
A	**AWV Improvements from S Holgate Street to the Battery Street Tunnel**												
A1a	Retrofit Existing Double-Level Structure												●
A1b	Retrofit Existing Single-Level Structure	●											
A1c	Retrofit Existing Structure – Limited to Passenger Vehicles and Transit			●			●						●
A1d	Rebuild Existing Structure	●											
A2a	Two-Level Aerial Replacement – West of Existing									●			●
A2b	Two-Level Aerial Replacement – Existing Location	●											
A2c	Enclosed Two-Level Aerial Replacement – West of Existing Location									●		●	●
A3a	One-Level Aerial with Six Lanes – Over Existing (Central Waterfront)									●			●
	One-Level Aerial with Six Lanes – Over Existing (South End)	●											
A3b	One-Level Aerial with Six Lanes – West of Existing									●			●
A4a	Multi-Lane Boulevard Surface Roadway	●											
A4b	Multi-Lane Boulevard Surface Roadway with Sections of Tunnel and/or Overpasses	●											
A5a	One-Level Cut-and-Cover Tunnel Under Alaskan Way	●											
A5b	Two-Level Cut-and-Cover Tunnel Concept under Alaskan Way											●	●
A6	Combine One-Level, One-Way Aerial with One-Way Surface Arterial												●
A7	Combine One-Level, One-Way Tunnel and One-Level, One-Way Aerial												●
A8	Combine One-Level, One-Way Tunnel and One-Way Surface Arterial												●
A9	Combine One-Level, Two-Way Bypass Tunnel with Two-Way Surface Arterial	●											

Alaskan Way Viaduct and Seawall Replacement Project
Screening Results Summary Table

	Concept	In EIS	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9	Goal 10	Other
A10	Combine a Two-Way Bypass Aerial with a Two-Way Surface Arterial	●											
A11	Bored Tunnels under Alaskan Way											●	●
B	**Battery Street Tunnel Improvements Within the AWV Corridor**												
B1a	Fire, Life, and Safety Upgrade to the Existing Battery Street Tunnel	●											
B1b	Seismic Upgrade to the Existing Battery Street Tunnel	●											
B2	Two-Level Cut-and-Cover Tunnel through Belltown											●	●
B3a	Bored or Mined Tunnel Under Belltown											●	●
B3b	Bored or Mined Tunnels Under Belltown											●	●
C	**Roadway Improvements Outside of the AWV Corridor**												
C1a	Twin Bored Tunnels at Western Avenue											●	●
C1b	Twin Bored Tunnel Routes at 1st Ave. and 2nd Ave.											●	●
C1c	Twin Bored Tunnels at 3rd Avenue			●								●	●
C1d	Twin Bored Tunnel Routes at 4th and 5th Avenue – East Portal			●								●	●
C1e	Twin Bored Tunnel Routes at 4th and 5th Avenue – South Portal			●								●	●
C1f	Twin Bored Tunnel Route at I-5			●								●	●
C2	Signature Bridge Across Elliott Bay from West Seattle			●	●		●			●	●		
C3	Elliott Bay Submerged Tunnel along Waterfront Area				●		●				●	●	●
C4	I-5 Improvements to Accommodate a Portion of SR 99 Demand			●									●
C5	Elliott Bay Floating Tunnel along Waterfront Area				●						●	●	●
C6	Signature Bridge from Stadium Area to Belltown via Elliott Bay			●	●					●	●		●

Alaskan Way Viaduct and Seawall Replacement Project
Screening Results Summary Table

	Concept	In EIS	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9	Goal 10	Other
C7	Existing 4th Avenue BNSF Tunnel Transitioning to Cut-and-Cover Tunnel			●	●								●
C8a	Floating Bridge from Port of Seattle Property to Connect at Broad Street				●		●				●		●
C8b	Floating Bridge from Port of Seattle Property to Connect at Seneca Street				●		●				●		●
D	**Multimodal Solutions**												
D1	Transportation System/Demand Management (TSM/TDM) to Maximize Existing System	●											
D2	High Capacity Transit along Existing AWV Corridor with New Concept	●											
E	**Related Improvements (would be combined with other concepts)**												
E1	**Access Improvement Concepts**												
E1a	Add Missing Ramps at the S. Spokane Street/Alaskan Way Interchange												●
E1b	Improve Access at Stadium Area	●											
E1c	Add New Access at the Downtown Core												●
E1d	Improve Access at Battery Street/Western Avenue and Elliott Avenue	●											
E1e	Add S Spokane Street Off-Ramp to 6th Avenue S for Buses												●
E1f	Add S. Spokane Street Off-Ramp to 4th Avenue S												●
E1g	Add Extension to the S. Spokane Street 4th Avenue On-Ramp												●
E1h	Provide Southbound Access to SR 99 from West Seattle Bridge												●
E2	**Regional Connection Concepts**												
E2a	Add Connection to South Lake Union Area	●											
E2b	Extend Alaskan Way Viaduct Corridor to I-5 thru Mercer Street Corridor												●

Alaskan Way Viaduct and Seawall Replacement Project
Screening Results Summary Table

	Concept	In EIS	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9	Goal 10	Other
E2c	Extend SR 520 to Alaskan Way Viaduct Corridor												●
E2d	Extend SR 99 Grade Separation over 1st Avenue S Bridge to SR 509												●
E2e	Improve Ballard/Interbay Connections	●											
E2f	Improve I-90 Connections												●
	Improve SR 519/SR 99 Connections	●											
E2g	Improve I-5/SR 99 Connection at S. Spokane Street												●
E2h	Improve Waterfront Access between the West Seattle Bridge and Battery Street												●
E2i	Locate Tunnel Portal at Roy Street to Reconnect Crossings at Thomas and Harrison												●
E2j	Add Off-Ramp to Airport Way												●
E2k	Re-utilize Battery Street Tunnel as a Vehicular Connection to Alaskan Way												●
E2l	Lowered Aurora	●											
E2m	Widened Mercer Underpass	●											
E2n	Existing Mercer with Signals on SR 99 North of the Battery Street Tunnel	●											
E3	**Freight Improvement Concepts**												
E3a	Add SR 99 Grade Separation Crossing Between S. Atlantic and S. Spokane Streets												●
E3b	Add Missing Ramps at S. Spokane Street/Alaskan Way Interchange												●
E3c	S. Hanford Street Ramps to/from SR 99 for General Traffic/Freight												●
E3d	Improve East – West Freight Access between S. Spokane Street and S. Holgate Street												●

Alaskan Way Viaduct and Seawall Replacement Project
Screening Results Summary Table

	Concept	In EIS	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9	Goal 10	Other
E3e	Improve Broad Street Rail Crossing												●
E3f	Move Truck Containers from Waterfront to I-90												●
E3g	Incorporate Existing Railroad Tracks Within the Cut-and-Cover Tunnel												●
E4	**Ferry Access Improvement Concepts**												
E4a	Add Ferry Traffic Queuing Area	●											
E4b	Expand Pedestrian Connections between the Ferry Terminal and Downtown	●											
E4c	Improve Ferry Connections to AWV Corridor and Downtown	●											
E5	**Urban Design Concepts**												
E5a	Improve Pedestrian Environment Along Waterfront	●											
E5b	Improve Pedestrian Connections Between Waterfront and Downtown	●											
E5c	Retail, Residential, and Public Space with Aerial Structure												●
E5d	Build Waterfront Pedestrian Park with Businesses												●
	Total	26	0	9	7	0	5	0	0	6	6	14	51
	Other - This column indicates options screened out for reasons other than the 10 screening criteria goals.												