



Cracked Column in the Viaduct



Damaged Rebar in the Viaduct

CHAPTER 1 - INTRODUCTION

What's in Chapter 1?

Chapter 1 describes where the project is located, who is leading the project, the project's history, the purpose of this document, the purpose and need for the project, and how the project relates to the Alaskan Way Viaduct and Seawall Replacement Program.

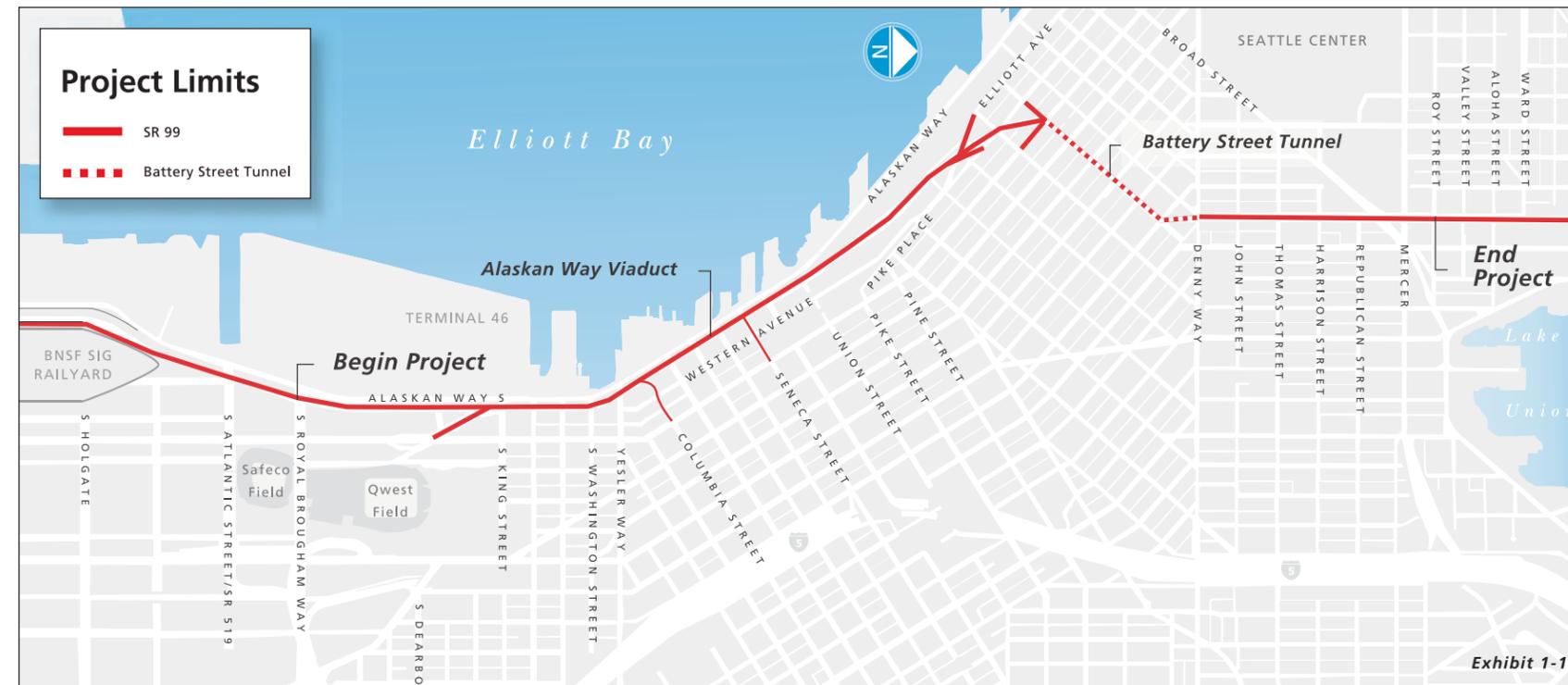
1 What is the Alaskan Way Viaduct Replacement Project?

The Alaskan Way Viaduct Replacement Project (Project) is located in downtown Seattle, Washington. The Project would replace State Route (SR) 99 from approximately S. Royal Brougham Way to Roy Street and remove the existing viaduct (SR 99) from approximately S. King Street to the Battery Street Tunnel.

2 What are the project limits and why were they selected?

The project limits begin at approximately S. Royal Brougham Way in the south and continue north to Roy Street, as shown in Exhibit 1-1. The project limits represent the logical end points for transportation improvements and environmental review based on identified project needs, which include providing a facility with improved earthquake resistance.

The project limits in the south overlap with project limits for the S. Holgate Street to S. King Street Viaduct Replacement Project, which are from S. Holgate Street to S. King Street. The projects overlap between S. Royal Brougham Way and S. King Street. There is overlap in this area because the S. Holgate Street to S. King Street Viaduct Replacement Project has been designed to fit with any viaduct replacement alternative for the central waterfront section, including a Bored Tunnel, Cut-and-Cover Tunnel, or Elevated Structure Alternative,



or the existing structure (No Build). To ensure a seamless connection between the two independent projects, both projects will work in the area between S. Royal Brougham Way and S. King Street.

Where are the construction staging sites located?

The project has proposed construction staging sites located both within and outside of the project limits, as shown in Exhibit 1-2. The project area is located in a highly urban environment where space for construction staging is limited. Because potential staging sites are limited, we have identified potential staging sites located outside of the project limits to ensure that sufficient

staging areas are available. The contractor may identify additional staging sites and would be responsible for obtaining environmental approvals for those sites.

3 Who is leading this project?

This project is being led by a partnership of three agencies: the Federal Highway Administration (FHWA), Washington State Department of Transportation (WSDOT), and City of Seattle (the City). FHWA is the federal lead agency for this project and is responsible for ensuring that federal regulations and standards are followed. FHWA has the primary responsibility for the content and accuracy of National Environmental Policy

Act (NEPA) documents and has approval authority for all expenditures of federal-aid highway funds. WSDOT owns SR 99 and the viaduct and is responsible for structural inspections and major maintenance. The City is responsible for viaduct traffic operations and minor maintenance. Additionally, the City owns and maintains Alaskan Way, the area underneath the viaduct, and many of the utilities located in the project area. WSDOT and the City also have the responsibility to evaluate the proposed alternatives under the State Environmental Policy Act (SEPA).

4 What is the history of this project?

Exhibit 1-3 summarizes the history of this project and the alternatives evaluated through the environmental impact statement (EIS) process. Interest in replacing the viaduct began in 1995 when a study conducted by WSDOT and the University of Washington determined that the viaduct was vulnerable to soil liquefaction in the event of an earthquake.¹ In early 2001, a team of design and seismic experts began work to consider various options for the viaduct. In the midst of this investigation, a 6.8-magnitude earthquake, called the Nisqually earthquake, shook the Puget Sound region on February 28, 2001.

The earthquake demonstrated the urgent need for replacing the viaduct with a seismically safe facility. In early 2002, seventy-six viaduct replacement concepts and seven seawall concepts were screened and packaged into the five build alternatives evaluated in the 2004 Draft EIS: the Rebuild, Aerial, Tunnel, Bypass Tunnel, and Surface Alternatives.

In late 2004, after the public comment period for the Draft EIS, these five build alternatives were narrowed down to two: a Cut-and-Cover Tunnel and an Elevated Structure. Between 2004 and 2006, design changes were made to the Cut-and-Cover Tunnel and Elevated Structure Alternatives, the project was extended farther north, and different construction approaches were considered. These changes required further evaluation in a Supplemental Draft EIS that was published in July 2006.

In December 2006, Governor Gregoire called for an advisory vote for Seattle residents. The Seattle City Council responded by authorizing a vote and placing the Elevated Structure Alternative and a Surface-Tunnel Hybrid Alternative on the ballot. The four-lane Surface-Tunnel Hybrid Alternative differed from the six-lane Cut-and-Cover Tunnel Alternative evaluated in the 2006 Supplemental Draft EIS. The Surface-Tunnel Hybrid Alternative was a four-lane cut-and cover tunnel that proposed to use safety shoulders as exit-only lanes and reduce the speed limit during rush hours. On March 13, 2007, the citizens of Seattle voted down both alternatives.

After the March 2007 vote, Governor Gregoire, King County Executive Sims, and Seattle Mayor Nickels chose to move forward with critical safety and mobility improvement projects at the north and south ends of the Alaskan Way Viaduct. These projects, called the Moving Forward projects, could proceed because they provide useful improvements that are needed regardless of other decisions, including how to replace SR 99 on the central waterfront. These projects were advanced while the Governor, County Executive, and Mayor worked together through a collaborative public process to develop a solution for replacing the viaduct along the central waterfront that would have broad consensus among the lead agencies, cooperating agencies, tribes, and the public.

The Moving Forward projects consist of the following improvements:

- Column safety repairs on the existing viaduct in the Pioneer Square area
- Electrical line relocation along the viaduct’s south end
- Replacement of the viaduct (SR 99) between S. Holgate Street and S. King Street in the south end
- Battery Street Tunnel maintenance and repairs
- Transit enhancements and other improvements

Originally, there was a sixth project that focused on replacing SR 99 between Lenora Street and the Battery Street Tunnel. However, this section was later included as

Proposed Construction Staging Areas



¹ WSDOT, 1995.

Exhibit 1-2

part of the central waterfront’s collaborative process discussed below.

Following the March 2007 vote, Governor Gregoire, King County Executive Sims, and Seattle Mayor Nickels committed to a collaborative effort, referred to as the Partnership Process, to forge a solution for replacing the viaduct along Seattle’s central waterfront. The Partnership Process occurred as part of the NEPA process for the Alaskan Way Viaduct Replacement Project as documented in a Notice of Intent (NOI) published in the Federal Register on July, 16, 2008.²

The Partnership Process looked at how improvements to the broader transportation system (including Seattle surface streets and I-5) could work with various ways to replace the viaduct, including surface streets, a new elevated structure, or a tunnel. The Partnership Process began evaluating eight scenarios or comprehensive solutions to learn what elements worked best together. This evaluation led to the development and analysis of three hybrid scenarios described below:

- **I-5, Surface, and Transit Hybrid:** SR 99 would be replaced with a pair of north- and southbound one-way streets near Seattle’s central waterfront. This scenario included a high level of transit investment and extensive I-5 improvements.
- **Elevated Bypass Hybrid:** SR 99 would be replaced with two side-by-side, elevated roadways along Seattle’s central waterfront. Each structure would have two lanes in each direction. This scenario included some additional transit investments and improvements to I-5 and Alaskan Way.
- **Twin Bored Tunnel Hybrid (later refined to a single bored tunnel):** SR 99 would be replaced with two 2-lane bored tunnels between approximately S. Royal Brougham Way and Harrison Street. Evaluation of this hybrid led to the development of a single large-diameter bored tunnel. This scenario

included some additional transit investments and improvements to I-5 and Alaskan Way.

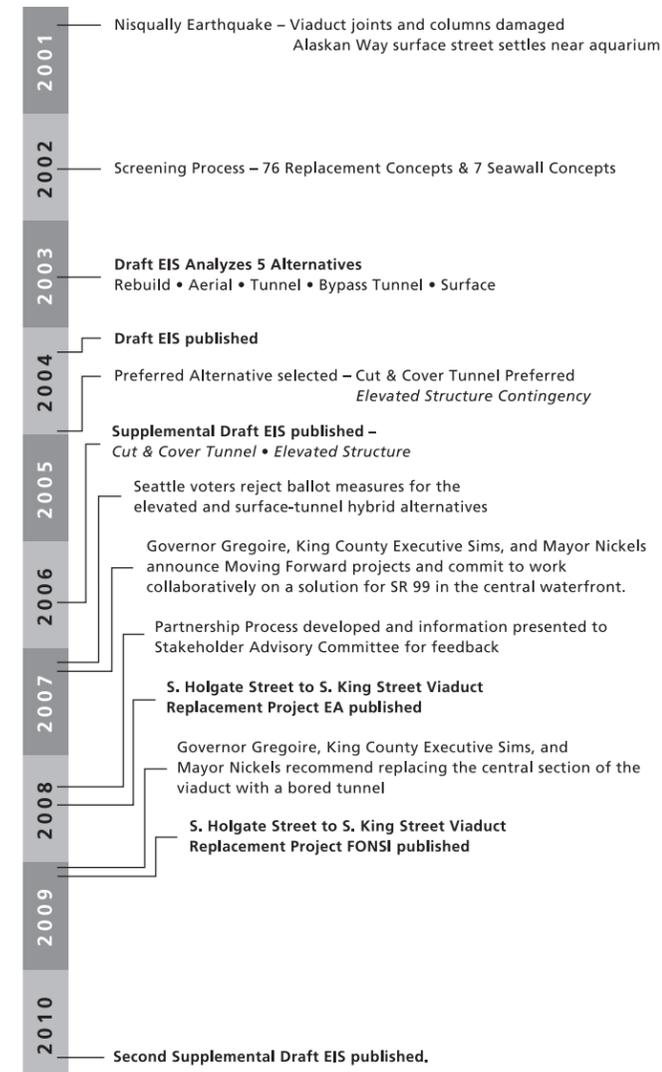
In January 2009, Governor Gregoire, former King County Executive Sims, and former Seattle Mayor Nickels recommended replacing the central waterfront portion of the Alaskan Way Viaduct and Seawall with a single, large-diameter bored tunnel. The executives also identified improvements that would complement the bored tunnel. These improvements included a restored seawall; a new waterfront surface street and connection from the waterfront to Western and Elliott Avenues; a waterfront promenade; transit enhancements; and a streetcar on First Avenue. The letter of agreement between Washington State, King County, and the City of Seattle dated January 13, 2009, is provided in the reference materials at the end of this Supplemental Draft EIS. Their recommendation was based on the following considerations:

- The potential for a bored tunnel to meet the six guiding principles established as part of the Partnership Process.
- The results of technical analysis for the scenarios and additional work to determine the viability of a single large-diameter bored tunnel.
- The support of diverse interests (community groups, businesses, and cause-driven organizations) for the bored tunnel.
- The willingness of the partners, with the support of the Port of Seattle, to develop a funding program that supplements the state’s committed contribution of up to \$2.8 billion.

5 Why are the lead agencies preparing this Supplemental Draft EIS?

A Supplemental Draft EIS is required when (1) changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or (2) new information or circumstances relevant to

Exhibit 1-3 Project Timeline



Appendix S, Project History Report

A description of the project development from 2006 through 2009 and details of the scenarios evaluated in the Partnership Process are provided in *Appendix S, Project History Report*.

What were the six guiding principles for the Partnership Process?

To create a shared vision, the Partnership Process developed the following six guiding principles:

- Improve public safety
- Provide efficient movement of people and goods now and into the future
- Maintain or improve downtown, regional, port, and state economies
- Enhance Seattle's waterfront, downtown, and adjacent neighborhoods as a place for people
- Create solutions that are fiscally responsible
- Improve the health of the environment

The guiding principles are described in *Appendix S, Chapter 3*.

Technical Reports CD

Updated technical reports supporting this Supplemental Draft EIS are included on a CD attached to the back cover. Because these technical reports supplement the 2004 Draft EIS and 2006 Supplemental Draft EIS, these previous EISs and technical reports are also included on the CDs.

² Federal Register. 2008.

environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS (23 CFR 771.130[a]). This Supplemental Draft EIS is being prepared to evaluate the new Bored Tunnel Alternative and to seek input from the public, agencies, and tribes on this alternative. Additionally, this document describes changes made to the other alternatives still under consideration since they were evaluated in the 2006 Supplemental Draft EIS, and it compares these alternatives to the Bored Tunnel Alternative. The other alternatives evaluated in this Supplemental Draft EIS include a Cut-and-Cover Tunnel, Elevated Structure, and a No Build Alternative (Viaduct Closed). The announcement to prepare this Supplemental Draft EIS was published in the Federal Register on June 4, 2009.³ The 2009 NOI replaced the 2008 NOI and reestablished FHWA's intent to continue the NEPA process that began with the NOI published on June 22, 2001.

6 What is the purpose of the Alaskan Way Viaduct Replacement Project and why is it needed?

Introduction

The Federal Highway Administration (FHWA), the Washington State Department of Transportation (WSDOT), and the City of Seattle are proposing to replace the Alaskan Way Viaduct because it is seismically vulnerable and at the end of its useful life. To protect public safety and provide essential vehicle capacity to and through downtown Seattle, the viaduct must be replaced. The Alaskan Way Viaduct is part of SR 99 located in downtown Seattle, King County, Washington. As defined for this project, SR 99 needs to be replaced or substantially modified from approximately S. Royal Brougham Way to Roy Street. Alternatives to replace this portion of SR 99 within its existing corridor have been considered in a 2004 Draft EIS and a 2006 Supplemental Draft EIS. Subsequently WSDOT, Seattle, and King County evaluated a range of solutions that also included improvements to the transportation system outside of the existing SR 99 corridor. This updated purpose and need statement is largely the result of this expanded evaluation; our previous

EIS evaluations; comments received after publication of prior EIS documents; and scoping comments received from a wide range of citizens, businesses, and organizations.

Purpose and Need for the Proposed Action

The Alaskan Way Viaduct is seismically vulnerable and at the end of its useful life. To protect public safety and provide essential vehicle capacity to and through downtown Seattle, the viaduct must be replaced. Because this facility is at risk of sudden and catastrophic failure in an earthquake, FHWA, WSDOT, and the City of Seattle seek to implement a replacement as soon as possible. Moving people and goods to and through downtown Seattle is vital to maintaining local, regional, and statewide economic health. FHWA, WSDOT, and the City of Seattle have identified the following purposes and needs the project should address.

The purpose of the proposed action is to provide a replacement transportation facility that will:

- Reduce the risk of catastrophic failure in an earthquake by providing a facility that meets current seismic safety standards.
- Improve traffic safety.
- Provide capacity for automobiles, freight, and transit to efficiently move people and goods to and through downtown Seattle.
- Provide linkages to the regional transportation system and to and from downtown Seattle and the local street system.
- Avoid major disruption of traffic patterns due to loss of capacity on SR 99.
- Protect the integrity and viability of adjacent activities on the central waterfront and in downtown Seattle.

The following paragraphs provide further information regarding the needs underlying each of these project purposes that are listed above.

Reduce Seismic Vulnerability

Because of its seismic vulnerability, the Alaskan Way Viaduct must be removed. The viaduct is deteriorating and at risk of sudden and catastrophic failure in an earthquake because of its design, age, and location. The viaduct was constructed in the 1950s and conformed to the design standards of that time. The structure was designed to seismic criteria that are less than one-third as stringent as today's criteria.⁴ The viaduct's existing foundations are embedded in liquefiable soil, and the structure is deteriorating. These factors make the structure vulnerable to earthquakes and necessitate its removal.⁴ The replacement for SR 99 must meet current standards for earthquake resistance.

Improve Traffic Safety

The viaduct and Battery Street Tunnel do not meet current roadway design standards and have deficiencies that need to be improved.⁴ Current design standards reflect the latest agreement among the states and FHWA on how to safely design new and upgraded highways. As now configured, the viaduct does not meet current standards for lane width, shoulder width, and stopping sight distance.⁴ The Battery Street Tunnel does not meet current standards for lane width, shoulder width,⁴ and stopping sight distance.⁵ North of the Battery Street Tunnel, several streets connect directly to SR 99 without room for drivers to accelerate or decelerate without affecting traffic flow or safety. These deficiencies result in higher than average collision rates for some segments of SR 99 within the project limits compared to similar facilities.⁵ The replacement for SR 99 should meet current standards for roadway design.

Provide Capacity to Move People and Goods

The Alaskan Way Viaduct portion of SR 99 provides essential capacity to and through downtown Seattle, carrying 20 to 25 percent of the traffic traveling through downtown. Together, I-5 and SR 99 through Seattle carry over \$80 billion in goods each year.⁶ The central waterfront portion of the SR 99 mainline is one of two primary north-south highway routes through Seattle. Maintaining this north-south through route is critical to

History of Changes to the Purpose and Need Statement

Question 6 in Chapter 3 explains how the purpose and need statement has been changed since the 2006 Supplemental Draft EIS.

³ Federal Register. 2009.

⁴ Parsons Brinckerhoff Quade & Douglas. 2002.

⁵ Parsons Brinckerhoff Quade & Douglas. 2004.

⁶ Larsen et al. 2005.

supporting a robust, integrated regional transportation system and the economic vitality of the city, Puget Sound region, and state. The through capacity provided by the viaduct cannot be provided elsewhere in the region if the facility were to close. This section of SR 99 also serves as a transit route to and from downtown for local and express bus service. For these and other reasons, the United States Congress has identified it as a project of national and regional significance⁷. The replacement for SR 99 should provide sufficient capacity for north-south trips to and through downtown.

Provide Transportation System Linkages

This portion of SR 99 provides important linkages for the regional and local transportation system. Directly south of the central waterfront section of SR 99, the highway interacts with the Port of Seattle and Seattle's Duwamish industrial area. This area is home to one of the West Coast's largest industrial ports and just over 80 percent of Seattle's designated industrial lands.⁸ The transportation system in this area plays a crucial role in the movement of freight and goods for the entire state and the Pacific Northwest region. As such, the connection provided by SR 99 to Port facilities and industrial activities is important to the efficient movement of freight and goods to and from Seattle.

Along the central waterfront, SR 99 provides efficient through access for traffic bound for locations north and south of the downtown core. In addition to providing an efficient through connection, the existing viaduct also provides access to and from the south and downtown Seattle via the Seneca Street off-ramp and Columbia Street on-ramp. Further, this section of SR 99 provides a connection for the Interbay, Magnolia, and Ballard neighborhoods in northwest Seattle with areas south of downtown via the Elliott and Western Avenues and Railroad Way on- and off-ramps. This connection is used by many businesses and residents in northwest Seattle and is not easily duplicated by other routes.

Directly north of the central waterfront, SR 99 provides links to the local streets that serve the Seattle Center, a

major regional civic center that welcomes more than 12 million visitors each year, generating \$1.15 billion in business activity.⁹ In this area, SR 99 separates Seattle Center and the Uptown neighborhood from the South Lake Union neighborhood and provides limited connections to these neighborhoods. Improvements to SR 99 should improve these inter-neighborhood connections as well as provide regional access to and from SR 99.

The replacement for SR 99 should provide linkages to the regional transportation system, and to and from downtown Seattle and the local street system.

Avoid Major Disruption of Traffic Patterns

The existing Alaskan Way Viaduct provides substantial capacity for north-south travel to and through downtown Seattle. The loss of substantial capacity on SR 99 for an extended period would adversely affect conditions for through traffic by increasing congestion on I-5 and the adjacent local roadway network. Since many of these adjacent facilities are already congested, extended loss of SR 99 capacity would add substantial delay for the traveling public (including transit) and would cause economic hardships for local and regional businesses. While disruption cannot be completely avoided, there is a need to replace the existing viaduct in a manner that minimizes disruption of traffic patterns by minimizing the time lapse between closure of the existing viaduct and opening of a replacement facility or facilities.

Protect the Integrity and Viability of Adjacent Activities on the Central Waterfront and in Downtown Seattle

The presence of the viaduct impedes the City's ability to implement its vision for redeveloping the central waterfront. The central waterfront section of the Alaskan Way Viaduct travels through and adjacent to downtown Seattle's urban core and the Seattle waterfront. The structure is elevated through the city, providing views of the waterfront to drivers, but substantially impairing views to and from the waterfront to the city. The high volume of traffic carried by the double-level structure contributes

substantial noise that affects the adjacent downtown and waterfront areas.

Since the viaduct was constructed in the 1950s, the Seattle downtown waterfront has been transformed from its origins as a working waterfront, characterized by shipping, warehouse, and industrial activities, to an important area for tourism and recreation. The central waterfront now has a mix of uses that include office, retail, hotel, residential, conference center, aquarium, museum, parks, cruise ship terminal, ferry terminal, and various types of commercial and recreational moorage. As such, the view and noise impacts caused by the existing elevated viaduct structure detract from the land uses found on the Seattle waterfront today. Seattle's vision for the central waterfront is based on reconnecting downtown with the waterfront, enhancing the waterfront's environmental sustainability, increasing views of Elliott Bay and the landforms beyond, facilitating revitalization of Seattle's waterfront, maintaining transportation access to and through the waterfront, and increasing opportunities for the public to access and enjoy the shoreline and waterfront. Therefore, the replacement for SR 99 should support land use plans for the central Seattle waterfront and downtown as described above.

7 How does this project relate to the Alaskan Way Viaduct and Seawall Replacement Program?

The Alaskan Way Viaduct Replacement Project complements a number of other projects with independent utility that improve safety and mobility along SR 99 and the Seattle central waterfront from the area south of downtown to Seattle Center. These improvements include the Moving Forward projects identified in 2007 and the improvements recommended as part of the Partnership Process. Collectively, these individual projects are referred to as the Alaskan Way Viaduct and Seawall Replacement Program (Program).

The 2004 Draft EIS and 2006 Supplemental Draft EIS did not refer to the Alaskan Way Viaduct and Seawall Replacement Program. The distinction between the

What is the Alaskan Way Viaduct & Seawall Replacement Program?

The term "Program" refers to a number of independent but complementary projects that will improve safety and mobility along SR 99 and the Seattle waterfront from the SODO area south of downtown to Seattle Center. These individual projects include the Moving Forward projects identified in 2007, as well as improvements recommended as part of the Partnership Process.

⁷ SAFETEA-LU. 2005.

⁸ City of Seattle. 2007

⁹ City of Seattle. 2008.

Alaskan Way Viaduct Project and the Program came after the Moving Forward projects were announced in 2007.

This Supplemental Draft EIS evaluates the short- and long-term environmental effects of the Alaskan Way Viaduct Replacement Project and the cumulative effects of complementary projects included in the Program. Environmental effects of the independent projects will be examined through separate environmental processes as identified in the project descriptions in Question 8.

8 What other projects are part of the Program?

Other projects that are collectively called the Alaskan Way Viaduct and Seawall Replacement Program are listed in Exhibit 1-4 and shown in Exhibit 1-5.

**Exhibit 1-4
Projects Included
In the Alaskan Way Viaduct & Seawall Replacement Program**

Project	ALTERNATIVES		
	Bored Tunnel	Cut-&-Cover Tunnel	Elevated Structure
INDEPENDENT PROJECTS THAT COMPLEMENT THE BORED TUNNEL ALTERNATIVE			
Elliott Bay Seawall Project	X	Included in alternative	Included in alternative
Alaskan Way Surface Street Improvements	X	Included in alternative	Included in alternative
Alaskan Way Promenade/Public Space	X	Included in alternative	Included in alternative
First Avenue Streetcar	X	Included in alternative	Included in alternative
Elliott/Western Connector	X	Function Provided	Function Provided
Transit Enhancements	X	Not Proposed	Not Proposed
PROJECTS THAT COMPLEMENT ALL BUILD ALTERNATIVES			
S. Holgate Street to S. King Street Viaduct Replacement Project	X	X	X
Mercer West Project	X	X	X
Transportation Improvements to Minimize Traffic Effects During Construction	X	X	X
SR 99 Yesler Way Vicinity Foundation Stabilization	X	X	X
S. Massachusetts Street to Railroad Way S. Electrical Line Relocation Project	X	X	X

Exhibit 1-4 shows that there are several independent projects that complement the Bored Tunnel Alternative that either are part of the Cut-and-Cover Tunnel and Elevated Structure Alternatives or are not proposed with these alternatives. The text below describes each of the

projects listed in Exhibit 1-4 and explains why some of these projects are proposed only for the Bored Tunnel Alternative.

Independent Projects That Complement the Bored Tunnel Alternative

Elliott Bay Seawall Project

The Elliott Bay Seawall Project is an effort by the City of Seattle and the Corps of Engineers to protect the shoreline along Elliott Bay, including Alaskan Way, from seawall failure due to seismic and storm events. The project limits extend from S. Washington Street in the south to Pine Street in the north. The Corps of Engineers and the City of Seattle are addressing the seawall in a separate NEPA process, which includes an EIS. The NOI for the EIS was published on May 28, 2010,¹⁰ and scoping occurred from June 1, 2010 through July 19, 2010.

The Elliott Bay Seawall needs to be rebuilt or replaced because it is deteriorating and vulnerable to earthquakes. However, the seismic stability of a viaduct replacement along Seattle’s central waterfront does not necessarily require that the seawall be rebuilt or replaced. The Cut-and-Cover Tunnel and Elevated Structure Alternatives include replacing the Elliott Bay Seawall because the alignments for these alternatives are located in close proximity to the failing seawall, which if not repaired, could compromise the seismic stability of the proposed cut-and-cover tunnel or elevated structures proposed. The Bored Tunnel Alternative proposes to construct a new tunnel inland; therefore, the failing seawall does not have the potential to affect the seismic stability of this alignment.

Alaskan Way Surface Street Improvements

The City of Seattle is leading this project and its associated environmental review process, which would take place under NEPA and/or SEPA as appropriate. This project involves rebuilding and improving Alaskan Way between S. King Street and Pine Street. The new surface street would be six lanes wide between S. King and Columbia Streets (not including turn lanes) and four lanes between Marion and Pike Streets. Generally, the new street would

Alaskan Way Viaduct & Seawall Replacement Program Elements



10 Federal Register. 2010.

be located east of the existing Alaskan Way surface street where the viaduct is today to create a wider public space along the waterfront. The new street would include sidewalks, bicycle facilities, parking/loading zones, and signalized pedestrian crossings at cross-streets. The new surface street would provide a regional truck route for freight traveling to and from the Duwamish/Harbor Island/SR 519 area and the Ballard Interbay Northend Manufacturing and Industrial Center (BINMIC).

Along the Alaskan Way surface street extensive construction activities would be required to replace the seawall. Large portions of the Alaskan Way surface street and sidewalks would need to be torn up and replaced. These construction-related effects and overall project costs can be minimized by constructing the Alaskan Way surface street improvements in combination with seawall replacement. For this reason, Alaskan Way surface street improvements are included with the Cut-and-Cover Tunnel and Elevated Structure Alternatives, and they are not included with the Bored Tunnel Alternative.

Alaskan Way Promenade/Public Space

The City of Seattle is leading this project and its associated environmental review process, which would take place under NEPA and/or SEPA as appropriate. This project would provide a new, expanded public open space to the west of the new Alaskan Way surface street between S. King Street and Pike Street. The open space would vary in width and would serve Piers 48 through 59, which have varying uses, including cruise ship and ferry terminals, restaurants, retail shops, hotels, and regional entertainment such as the Seattle Aquarium. Access to the waterfront piers would be provided by service driveways.

Between Marion and Pike Streets, the open space would be approximately 70 to 80 feet wide. This public space would be designed at a later date. Other potential public open spaces include a triangular space north of Pike Street and east of Alaskan Way, and parcels created by removing the viaduct between Lenora and Battery Streets.

New public open space and a promenade on Alaskan Way are included in the descriptions of the Cut-and-Cover Tunnel and Elevated Structure Alternatives, and they are not included with the Bored Tunnel Alternative for the same reasons provided for the Alaskan Way surface street improvements.

First Avenue Streetcar Evaluation

The City of Seattle is leading this project and its associated environmental review process, which would take place under NEPA and/or SEPA as appropriate. This project will evaluate a new streetcar line along First Avenue between Pioneer Square and Seattle Center in the City's transit plan. This alignment would pass through several of Seattle's densest neighborhoods, including Pioneer Square, the downtown Central Business District, Belltown, and Uptown. It would serve many tourist and regional attractions, such as Pike Place Market, the Seattle waterfront piers, Seattle Art Museum, Seattle Aquarium, Olympic Sculpture Park, and Seattle Center.

The Cut-and-Cover Tunnel and Elevated Structure Alternatives propose to build a streetcar on Alaskan Way as part of the Alaskan Way surface street improvements. The Bored Tunnel Alternative does not include building a streetcar on the central waterfront. Instead, Governor Gregoire, former Seattle Mayor Nickels, and former County Executive Sims proposed constructing a streetcar on First Avenue as part of their recommendation from the Partnership Process.

Elliott/Western Connector

The City of Seattle is leading this project and its associated environmental review process, which would take place under NEPA and/or SEPA as appropriate. The Elliott/Western Connector would provide a connection from Alaskan Way to the Elliott/Western corridor that provides access to and from BINMIC and neighborhoods north of Seattle (including Ballard and Magnolia). The connector would be four lanes wide and would provide an overcrossing of the BNSF mainline railroad tracks. Additionally, it would provide local street access to Pike Street and Lenora Street and integrate back into the street

grid at Bell Street, which would improve local street connections in Belltown. The new roadway would include bicycle and pedestrian facilities.

The Elliott/Western Connector is an independent project associated with the Bored Tunnel Alternative. Although these specific improvements are not proposed with the Cut-and-Cover Tunnel and Elevated Structure Alternatives, these alternatives provide a functionally similar connection with SR 99 ramps at Elliott and Western Avenues, similar to the existing viaduct structure. The Bored Tunnel Alternative does not include these ramp connections, which would serve drivers heading to and from northwest Seattle neighborhoods. The Elliott/Western Connector is an independent project that would improve roadway connections for travelers heading to and from northwest Seattle neighborhoods compared to the connections provided by the Bored Tunnel Alternative.

Transit Enhancements

A variety of transit enhancements would be provided to support planned transportation improvements associated with the Alaskan Way Viaduct and Seawall Replacement Program. Development of the specific improvements is underway, but would include (1) new transit service with Delridge RapidRide, (2) additional service hours for West Seattle and Ballard RapidRide, (3) adding peak-hour express routes to South Lake Union and Uptown, and (4) local bus changes (such as realignments and a few additions) to several West Seattle and northwest Seattle routes.

These transit enhancements are proposed only with the Bored Tunnel Alternative based on the recommendation provided by Governor Gregoire, former Seattle Mayor Nickels, and former County Executive Sims. Environmental review is not required for these enhancements.

Projects That Complement All Build Alternatives
S. Holgate Street to S. King Street Viaduct Replacement Project

WSDOT is leading this project that is currently being constructed. The S. Holgate Street to S. King Street Viaduct Replacement Project will replace this seismically vulnerable portion of SR 99 with a seismically sound structure that is designed to current roadway and safety standards. An Environmental Assessment for this project was completed in June 2008, and the Finding of No Significant Impact (FONSI) was published in February 2009. Construction began in mid-2009 and is expected to be completed at the end of 2014.

Mercer West Project

The City of Seattle is leading this project and its associated environmental review process, which would take place under NEPA and/or SEPA as appropriate. The Mercer West Project includes improvements on Mercer Street between Fifth Avenue N. and Elliott Avenue W. The improvements include reconfiguring Mercer and Roy Streets west of Fifth Avenue N. to accommodate two-way traffic. The proposed improvements would improve access from SR 99 for drivers traveling to Uptown (Lower Queen Anne), Ballard, Interbay, and Magnolia.

Transportation Improvements to Minimize Traffic Effects During Construction

Several transportation improvements are underway to help offset traffic effects during construction of projects included in the Alaskan Way Viaduct and Seawall Replacement Program. These projects are being led by either WSDOT or the City of Seattle and have already obtained environmental approval or will be reviewed as appropriate under NEPA and/or SEPA. These transportation improvements include the following projects:

- Adding variable speed signs and travel time signs on I-5 to help maximize safety and traffic flow.

- Providing funding for the S. Spokane Street Viaduct Widening Project, which includes a new Fourth Avenue S. off-ramp for West Seattle commuters.
- Adding buses and bus service in the West Seattle, Ballard/Uptown, and Aurora Avenue corridors during construction, as well as a bus travel time monitoring system.
- Upgrading traffic signals and driver information signs for the Denny Way, Elliott Avenue W./15TH Avenue W., south of downtown, and West Seattle corridors to support transit and traffic flow.
- Providing information about travel alternatives and incentives to encourage use of transit, carpool, and vanpool programs.

SR 99 Yesler Way Vicinity Foundation Stabilization (Column Safety Repairs)

WSDOT was the lead for this project, which was completed in April 2008. Environmental review under NEPA and SEPA occurred prior to project construction. This project strengthened four column footings supporting the existing viaduct between Columbia Street and Yesler Way. To prevent the columns from sinking further, crews drilled a series of steel rods surrounded by concrete into stable soil, and then added a layer of reinforced concrete to tie the new supports to the existing column footings.

S. Massachusetts Street to Railroad Way S. Electrical Line Relocation Project (Electrical Line Relocation Along the Viaduct's South End)

WSDOT was the lead for this project, which was completed in December 2009. Environmental review under SEPA was completed prior to project construction. Electrical lines between S. Massachusetts Street and Railroad Way S. were relocated from the viaduct to underground locations. The electrical lines needed to be relocated to protect downtown's power supply in the event of an earthquake.

Battery Street Tunnel Maintenance and Repairs

Battery Street Tunnel maintenance and repair work was identified as one of the Moving Forward projects. However, the need for this work depends on how the tunnel might be used in the future. The Battery Street Tunnel would be used as part of the alternatives studied in the 2004 Draft EIS and 2006 Supplemental Draft EIS. With the Bored Tunnel Alternative, the Battery Street Tunnel would not be needed and would be decommissioned. WSDOT and the City of Seattle are committed to maintaining the Battery Street Tunnel to ensure that it remains safe for drivers for as long as it is needed.