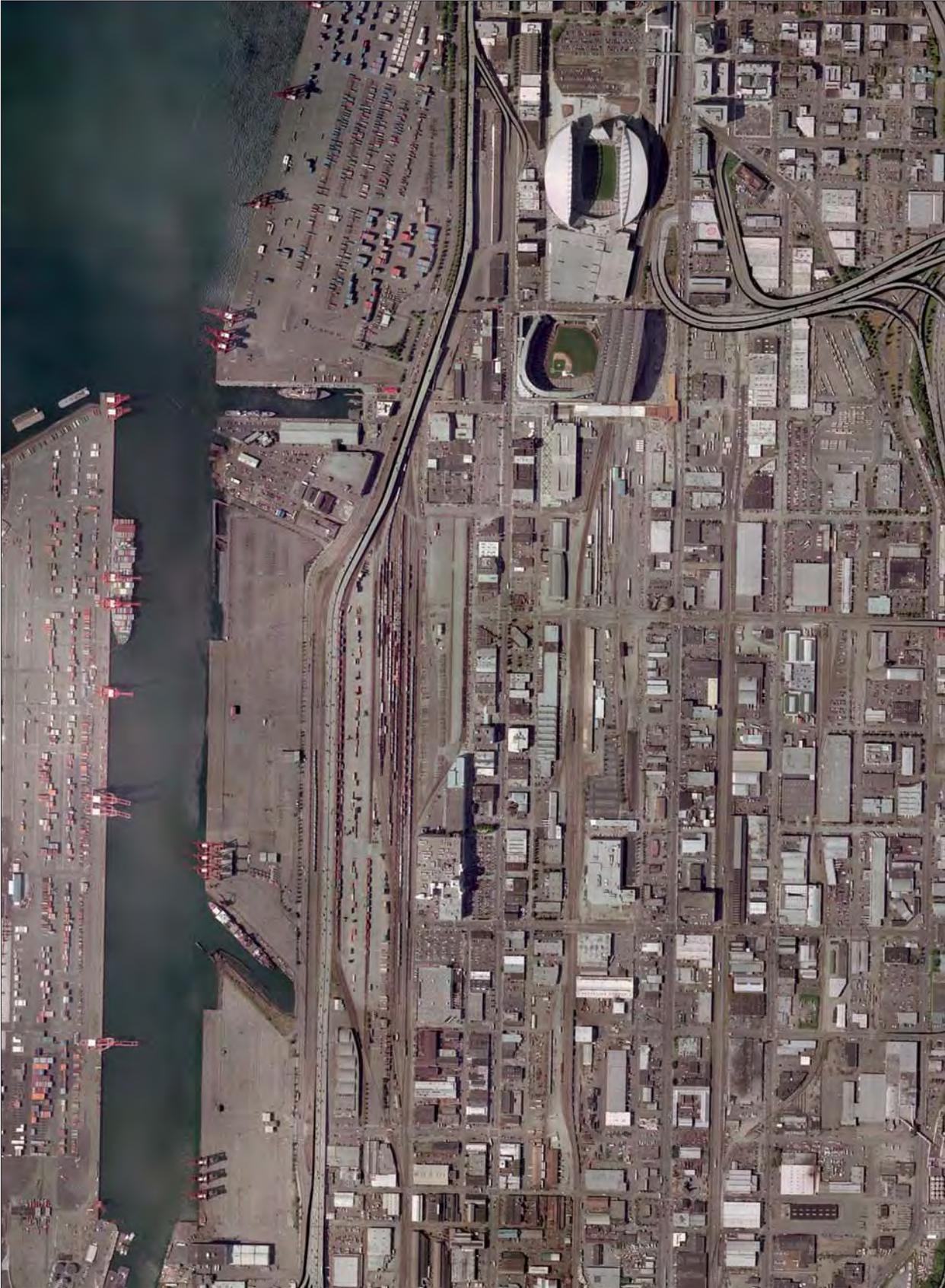


Project Area Overview



CHAPTER 2 - ALTERNATIVES DEVELOPMENT

What's in Chapter 2?

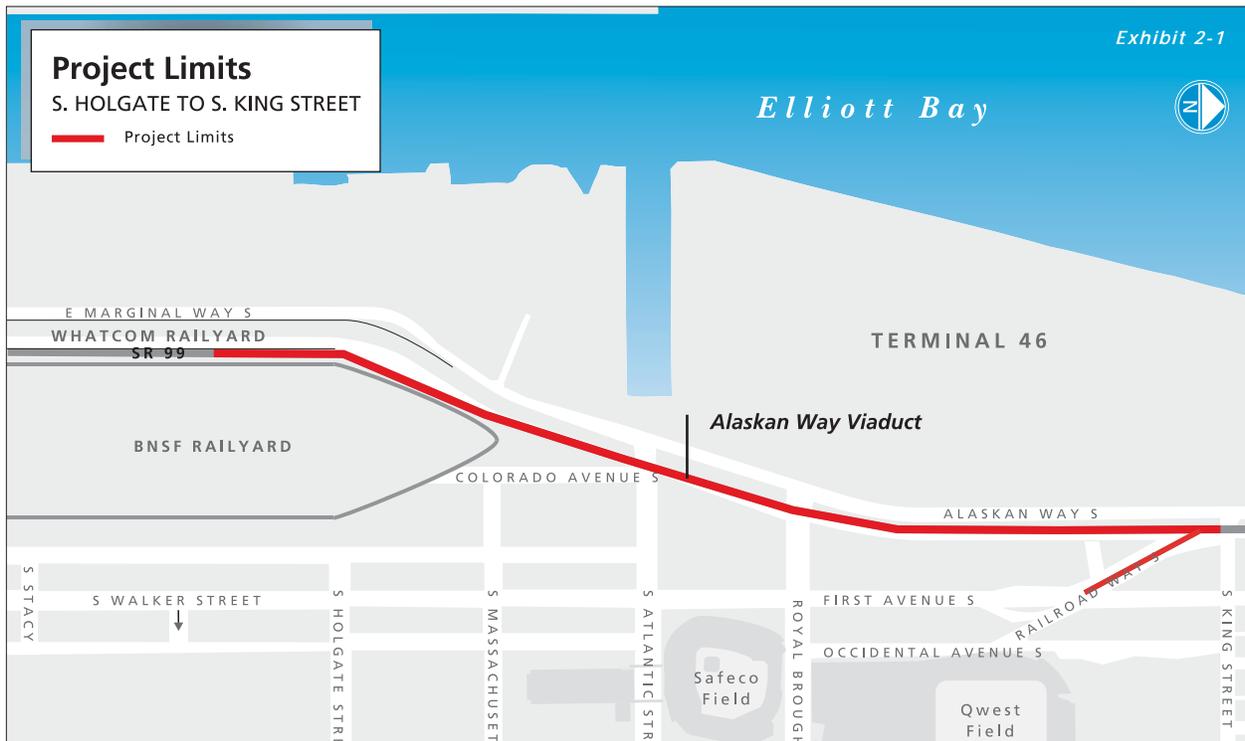
Chapter 2 identifies the project limits, identifies and briefly describes the alternatives evaluated in this EA, and explains how the alternatives were developed and how the public shaped these alternatives.

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

The project limits are shown in Exhibit 2-1 and are defined as S. Walker Street in the south, which is just south of S. Holgate Street, and S. King Street in the north.

Southern Endpoint - S. Walker Street

S. Walker Street is defined as the southern endpoint to allow for the transition between the at-grade section of SR 99 and the seismically vulnerable, elevated roadway north of S. Holgate Street that needs to be replaced.



Proposed Build Alternative



Exhibit 2-2

Northern Endpoint – S. King Street

S. King Street was selected as the northern endpoint because there are unique transportation needs south of this point on SR 99 and Alaskan Way S. due to the mix of freight, rail, transit, commuter, event, bicycle, and pedestrian traffic. This section of SR 99 and Alaskan Way S. interacts with the Port of Seattle and is a vital international trade and transportation crossroads. Key transportation routes and connections for freight in this area are provided by I-5, I-90, SR 99, SR 519, Alaskan Way S., E. Marginal Way S., and one of the busiest railyards in the Pacific Northwest.

In addition, two sports stadiums and an event center are located adjacent to SR 99 in this area. On game days and during special events, thousands of people, vehicles, pedestrians, and buses are present. This area also serves traffic getting to the Seattle Ferry Terminal. Hundreds of cars use this section of the SR 99 corridor each day to access ferry service. In addition, this section of SR 99 supports transit to and from West Seattle and other areas south of downtown.

South of S. King Street, alternatives for SR 99 and Alaskan Way S. should support surrounding industrial, freight terminal, warehouse, and stadium-related land uses south of downtown, which are substantially different than land uses surrounding SR 99 north of S. King Street. North of S. King Street, surrounding land uses include a mix of commercial office space, retail, tourist and recreational waterfront, and residential areas.

2 What alternatives are evaluated in this EA?

Two alternatives are evaluated in this EA: the Build Alternative and the No Build Alternative.

Build Alternative

The Build Alternative, shown in Exhibit 2-2, would replace the existing viaduct between S. Holgate Street and S. King Street with a safer facility that meets current seismic and roadway design standards. These improvements would replace approximately 40 percent of the existing viaduct structure located between S. Holgate Street and the Battery Street Tunnel.

Near S. Holgate Street, SR 99 would transition from an at-grade roadway to a side-by-side aerial roadway crossing over S. Atlantic Street and the BNSF tail track. SR 99 would return to grade for a short distance north of S. Royal Brougham

What is the tail track?

The tail track is a single railroad track that connects the BNSF Seattle International Gateway (SIG) Railyard on the east side of SR 99 to the Whatcom Railyard located west of SR 99. The tail track is used to assemble and sort railroad cars for both railyards.

Way. SR 99 would then transition to a stacked, aerial structure to match the existing viaduct at about S. King Street. Between S. Atlantic Street and S. King Street the northbound lanes of Alaskan Way S. would be routed along the east side of SR 99 and the southbound lanes would be along the west side of SR 99. As part of the design, S. Royal Brougham Way would no longer cross SR 99. S. Royal Brougham Way would be permanently closed between the new northbound and southbound Alaskan Way S. roads. A new northbound off-ramp and southbound on-ramp would be provided just south of S. King Street. The existing northbound on-ramp and southbound off-ramp at First Avenue S. near Railroad Way S. would be maintained.

New roadways and connections would be provided near S. Atlantic Street. These connections include:

- Providing a new grade-separated access for freight and general purpose traffic traveling between the Seattle International Gateway (SIG) Railyard, SR 519, the Port of Seattle, and the stadiums. This access would be provided by a new U-shaped undercrossing below SR 99 on the north side of S. Atlantic Street. This new connection would improve vehicle access by providing a route for east-west traffic when railroad cars on the tail track block the at-grade roadway.
- Improving Colorado Avenue S. to enhance access to the new North SIG Railyard. These improvements include providing two southbound and one northbound dedicated truck-only lanes on the west side of the street, and one general purpose traffic lane in each direction on the east side of the street.
- Providing northbound and southbound frontage roads that would provide access between Alaskan Way S. and E. Marginal Way S. In addition, the northbound frontage road would provide access from S. Atlantic Street to the new remote holding area for Seattle Ferry Terminal traffic and to Alaskan Way S.
- Reconfiguring the intersections where S. Atlantic Street meets the new Alaskan Way S. frontage roads, the new U-shaped undercrossing, and Colorado Avenue S.

Rail

The existing BNSF tail track would be relocated west of the new SR 99 roadway and would extend north from the SIG Railyard to the vicinity of S. King Street. The Whatcom lead track would also be relocated to connect to the relocated tail track so that railroad cars could be maneuvered between the

What is the Whatcom lead track?

The Whatcom lead track connects the Whatcom Railyard, which is located on the west side of SR 99, to the BNSF tail track.

Whatcom Railyard on the west side of SR 99 and the SIG Railyard on the east side of SR 99.

Ferry Holding

A remote ferry holding area would be added between S. Royal Brougham Way and S. King Street along the east side of SR 99. The ferry holding area would be accessed at the intersection of northbound Alaskan Way S. and S. Royal Brougham Way.

Bicycle and Pedestrian Facilities

Existing bicycle and pedestrian access would be maintained or improved as part of this project. Detailed information about changes to bicycle and pedestrian facilities is provided in Chapter 3.

No Build Alternative

If no action is taken, the Governor has indicated that the viaduct should be torn down in 2012 to protect public safety. For purposes of providing a comparison between the proposed Build Alternative and the No Build Alternative, we have assumed that the existing viaduct between S. Holgate and S. King Streets would continue to remain in operation with routine maintenance until WSDOT determines the structure is too unsafe to use, possibly as early as 2012.

3 How long would it take to build the project?

The project is expected to take approximately 4 years and 4 months to build and cost approximately \$550 million. During the first 8 months, early utility relocations would take place prior to the major construction stages. The major construction stages are expected to take 3 years and 2 months. The final 6 months of construction would involve surface restoration in the project area.

Construction activities are expected to affect traffic on SR 99 for 2 years and 3 months. Construction would typically take place 5 days per week, 10 hours per day, but may occur up to 24 hours per day, 7 days per week at times. Construction over and above the typical 50-hour work week would only occur when needed to keep the project on schedule. Some night or weekend work may be required for roadway crossings, tail track relocation, or other critical construction phases.

During construction, WSDOT would make it a priority to maintain traffic capacity on SR 99 as much as possible, minimize traffic effects on First Avenue S. and other local streets,

What is remote ferry holding?

Remote ferry holding is an area where vehicles would wait to enter the Seattle Ferry Terminal when the dock is full. Typically, remote ferry holding is needed during the peak summer season and on holidays.

and maintain access to and from area businesses and the stadiums. Details about construction effects are provided in Chapter 4.

4 How was the Build Alternative developed?

Many different viaduct replacement concepts have been considered since the February 2001 Nisqually earthquake demonstrated the need to replace the viaduct structure north of S. Holgate Street. This discussion summarizes WSDOT, FHWA, and the City of Seattle’s work over the past several years to develop, evaluate, and refine various south end design concepts for the Build Alternative evaluated in this EA.

South End Design Development, 2001 through 2004

Between 2001 and 2004, we worked with the public and multiple stakeholders, including King County, the Port of Seattle, the U.S. Coast Guard, the freight community, BNSF and Union Pacific Railroads, the stadiums, a volunteer community leadership group, and resource agencies, to identify and develop desirable design concepts to evaluate. This effort was documented in the *Final Revised Screening of Design Concepts, June 2003*¹ and *SR 99: Alaskan Way Viaduct and Seawall Replacement Project Draft EIS, March 2004*², which are incorporated by reference into this EA.

¹Parametrix 2003

²WSDOT et al. 2004

A total of 76 concepts were considered for replacing SR 99 between S. Spokane Street and Roy Street. We considered several different possible structure types for replacing the viaduct (such as tunnels, elevated structures, and at-grade roadways). We also considered concepts such as retrofitting the existing viaduct, or tearing it down and replacing it with a new roadway in a different location (such as a tunnel under Fourth Avenue or a bridge in Elliott Bay) or making improvements to other roadways such as I-5.

As part of this screening effort and subsequent studies that have followed, we determined that options such as replacing the viaduct with a new roadway alignment outside the existing corridor or retrofitting it are not feasible. A new roadway alignment is problematic because very little land is available for a new highway corridor through Seattle. Studies of various retrofitting concepts over the years have shown that a retrofit would fail to provide a cost-effective, long-term solution that adequately addresses the weakened state of the existing structure. Furthermore, replacing the viaduct is superior to retro-

fitting it when seismic performance, aesthetics, cost, and risk are balanced³.

³Parsons Brinckerhoff 2002 and 2003

In addition to a new alignment or retrofit, we considered three possible structure types to replace the existing viaduct: another elevated structure, an at-grade roadway, or a tunnel. We concluded that an elevated structure or at-grade roadway would be feasible replacement options in the south end, but that replacing the south end viaduct with a tunnel was not feasible due to poor soil conditions.

In addition to structure types, we considered a wide range of concepts that could improve SR 99 south of S. King Street. These concepts included ideas such as:

- Providing additional ramps to improve connections between SR 99 and S. Spokane Street, the West Seattle Bridge, the stadiums, Sixth Avenue S., Fourth Avenue S., S. Hanford Street, and Airport Way S.
- Extending the SR 99 grade-separated roadway to the First Avenue S. Bridge.
- Adding an SR 99 grade-separated access between S. Spokane and S. Atlantic Streets.
- Adding a remote ferry holding area for Seattle Ferry Terminal traffic.
- Improving pedestrian and bicycle conditions and connections.

Most of the concepts above were dropped from further consideration because they were not directly related to the purpose of the project, which focuses on improving seismic stability and maintaining or improving roadway capacity. Furthermore, the ideas that were dropped (such as adding ramps to S. Hanford Street) would not be precluded by viaduct replacement concepts considered in the south end, meaning that these ideas could be considered and pursued in the future once the viaduct is replaced. A few concepts were advanced for further study, including:

- Improving access near the stadium area.
- Improving connections between SR 99 and SR 519.
- Adding a remote ferry holding area.
- Improving pedestrian and bicycle conditions and connections.

These concepts were advanced and reflected in the four south end designs evaluated in the *SR 99: Alaskan Way Viaduct and Seawall Replacement Project Draft EIS*, which evaluated effects of the following replacement designs:

SR 99 South End – Draft EIS Design

SR 99 At-Grade with SR 519 Interchange Elevated



Exhibit 2-3

- **SR 99 At-Grade with SR 519 Interchange Elevated** – Replace the viaduct with a side-by-side at-grade roadway and a full aerial interchange connecting to SR 519 at S. Atlantic Street and S. Royal Brougham Way. This design was the most common design in the Draft EIS, evaluated with three of the five alternatives, and is shown in Exhibit 2-3.
- **SR 99 Stacked Aerial with SR 519 Interchange At-Grade** – Replace the viaduct with a stacked aerial roadway and a full at-grade interchange connecting to SR 519 at S. Atlantic Street and S. Royal Brougham Way.
- **SR 99 Side-by-Side Aerial with SR 519 Interchange At-Grade** – Replace the viaduct with a side-by-side aerial roadway and a full at-grade interchange connecting to SR 519 at S. Atlantic Street and S. Royal Brougham Way.
- **SR 99 At-Grade with SR 519 Interchange At-Grade** – Replace the viaduct with a side-by-side at-grade roadway and a full at-grade interchange connecting to SR 519 at S. Atlantic Street and S. Royal Brougham Way.

The analysis completed for the four designs evaluated in the 2004 Draft EIS indicated that substantial effects were associated with these designs. Specifically, all four of the designs

would have required extensive property acquisitions on important industrial properties such as Terminal 46. Furthermore, all of the designs assumed that the Whatcom Railyard would be closed for several years during construction, which was determined to be an unacceptable and unmitigatable project effect.

South End Designs Developed and Evaluated in the 2006 Supplemental Draft EIS

The four designs evaluated in the 2004 Draft EIS were refined into two designs evaluated in the 2006 SR 99: *Alaskan Way Viaduct and Seawall Replacement Project Supplemental Draft EIS*⁴. The two designs evaluated in the 2006 Supplemental Draft EIS were called:

⁴WSDOT et al. 2006

- **SR 99 At-Grade with a Reconfigured Whatcom Railyard**, which was the preferred south end design at the time, and is shown in Exhibit 2-4.
- **SR 99 At-Grade with a Relocated Whatcom Railyard**.

The designs evaluated in the 2006 Supplemental Draft EIS had fewer adverse effects than the 2004 Draft EIS designs.

SR 99 South End – Supplemental Draft EIS Design

SR 99 At-Grade with Reconfigured Whatcom Railyard

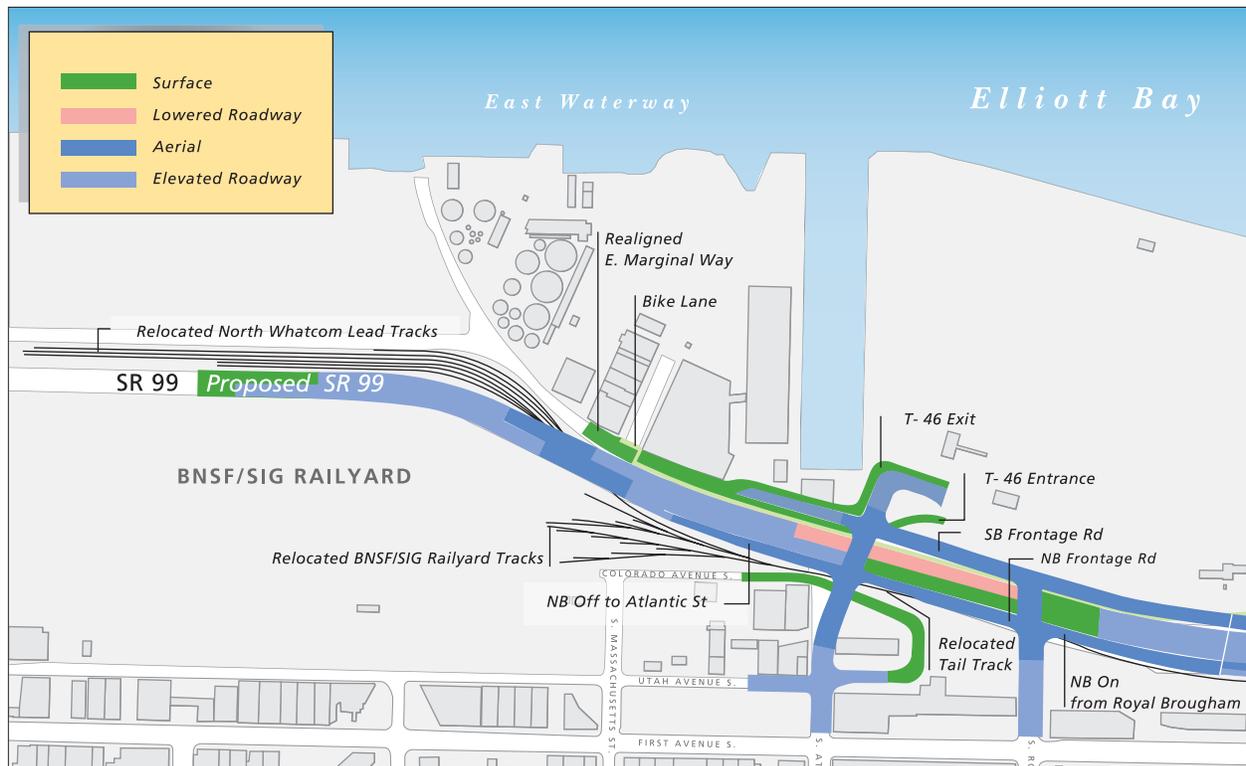


Exhibit 2-4

Specifically, they required fewer property acquisitions. They were also less expensive, but provided the same functions and ramp connections provided by the 2004 Draft EIS designs. Finally, the designs could be built without closing the Whatcom Railyard for several years, but would require closing SR 99 entirely or detouring traffic down First Avenue S. for about 2 years.

South End Supplemental Draft EIS Designs Refined

In late 2005 through mid-2007, we convened an engineering study and design team to continue work to reduce the proposed size and cost of the designs evaluated in the 2006 Supplemental Draft EIS. This led to the development of ten additional south end designs and variations that were examined and documented in the *SR 99 South End Alignment Study*⁵, which is incorporated by reference into this EA. The ten designs were screened to one design, called 10C.

⁵ Parsons Brinckerhoff, Quade, & Douglas, Inc. and Jacobs Civil Inc. 2006

In April 2007, it became clear that a decision on the central waterfront portion of SR 99 would not be reached soon, although the entire viaduct structure still needed to be replaced.

Beginning in May 2007, we worked to refine the 10C design to be consistent with a wide variety of potentially feasible viaduct replacement concepts in the central waterfront area north of S. King Street. This effort led to the evaluation of six new designs, including a modified version of the 10C design from 2006. These six designs were evaluated and documented in a July 2007 report called the *Alaskan Way Viaduct Removal Project South Holgate Street to South King Street Concept Planning Study Memorandum*⁶, which is incorporated by reference into this EA. The costs associated with building each of the concepts were similar, but ultimately the design selected was called Option 6, and it is the design evaluated as the Build Alternative in this EA. Option 6 was selected as the recommended design because, compared to the other designs, it:

⁶ PB Americas and Jacobs Civil Inc. 2007

- Further reduces effects to adjacent properties.
- Offers the most flexibility for tying in to a wide range of reasonably foreseeable viaduct replacement options in the central waterfront.
- Reduces visual effects and offers the greatest opportunities for creating an aesthetically pleasing urban design with the surrounding area.
- Offers improvements to freight mobility.
- Provides good access to and from downtown via SR 99.

5 How has the public been involved?

The public has been provided with multiple opportunities to learn about the Alaskan Way Viaduct and Seawall Replacement Program since it began in 2001. Our public involvement efforts associated with the larger program are documented in the 2004 Draft EIS, 2006 Supplemental Draft EIS, and the program website.

Since the 2006 Supplemental Draft EIS was published, we have provided many opportunities for people to learn about the project and ask questions:

- We hosted an open house in Pioneer Square on August 22, 2007. About 75 people attended the open house. The purpose of the open house was to provide information about upcoming construction to stabilize a section of the viaduct that was damaged in the 2001 Nisqually earthquake. The open house didn't focus on the S. Holgate Street to S. King Street Viaduct Replacement Project, but it highlighted the project because of its proximity to Pioneer Square.
- We hosted two public scoping meetings that took place on September 24 and September 26, 2007. Combined attendance for the two events was approximately 110 people. The purpose of the meetings was to gather public comments on environmental issues that should be considered in this EA and to show proposed design plans for the project. Comments were received via paper surveys, a Web-based survey, public testimony, or submitted as letters/handwritten items. A total of 59 comment items were received, including seven agency letters, three letters from businesses, 20 testimonies, and 29 citizens' submittals. A summary of scoping comments received is contained in Question 8 of this chapter.
- We provided project briefings at 57 community meetings between March and December 2007. These briefings were presented to various stakeholders, including neighborhood groups, businesses, organizations, and interest groups.
- We attended 27 community fairs and festivals between March and December 2007, where we passed out updated project information and answered questions.
- We have continued to provide updated project information on our program website, via email messages, through brochures and fact sheets, and via telephone from our project information line. Many brochures and fact sheets have been translated into languages other than English to reach a larger audience.

Where can I learn more about the project and comment on this EA?

There are several ways you can learn more about the project and submit your comments on this document:

Attend Public Hearings

You are invited to attend the hearings listed below:

Town Hall

Thursday, July 10, 2008
1119 8TH Avenue, Seattle, WA 98101
4:00 - 7:00 p.m.

Madison Middle School

Tuesday, July 15, 2008
3429 45TH Avenue SW, Seattle WA 98116
5:00 - 8:00 p.m.

Submit Comments

You may submit your comments on this document by email or in writing.

E-mail

southviaductEA@wsdot.wa.gov

In Writing

Angela Freudenstein
WSDOT
999 Third Avenue, Suite 2424
Seattle, WA 98104-4019

Your comments on the EA must be post-marked by August 11, 2008.

How have we been engaging low-income people, minorities, social service providers, and minority-owned businesses?

We have been working with social service organizations that provide information to minority and low-income people in and near the project area. Outreach to these groups is part of an ongoing effort that began in 2002.

Since March 2007, we have met with eight social service organizations located in or near the project area. The purpose of the meetings has been to discuss the project and potential effects, learn about the organizations and the groups they serve, and identify ways to keep low-income and minority populations informed and engaged in the project. In these meetings, many service providers have indicated that they are most concerned about construction effects to traffic and public transportation.

Other examples of our coordination with these groups include leading community briefings, providing project information in languages other than English, attending fairs and festivals, and targeting outreach efforts to small and/or minority-owned businesses. On September 10, 2007, we held a briefing for the community at the monthly International District Forum. People representing various small and/or minority-owned businesses and community organizations located in the International District attended this meeting. At this briefing, we shared information about the S. Holgate Street to S. King Street Viaduct Replacement Project, answered questions, and listened to concerns voiced mostly about potential construction effects. On September 27, 2007, we also held a briefing for service providers in and around the downtown area to engage them in early conversations on how to best protect the well-being and safety of the homeless population in the project area when construction begins.

6 How have government agencies been involved?

We continue to proactively involve several agencies and project area organizations in ongoing discussions about the project. On September 24, 2007, we hosted an EA scoping meeting to gather information from agencies, organizations, and tribes on what environmental issues they think should be considered in this EA. Approximately 15 agencies and organizations participated, and many of them submitted formal scoping comments. A summary of comments received as part

Why do we target outreach efforts and seek input from minority and low-income populations?

A federal executive order issued in 1994 requires federal agencies to provide affected minority and low-income populations opportunities to be involved in projects. The executive order also requires federal agencies to make sure projects do not disproportionately affect these traditionally underserved groups.

of that scoping meeting is provided in Question 8 of this chapter.

In addition, we have ongoing discussions with several agencies and organizations in the project area, such as various departments within King County and the City of Seattle, BNSF, Union Pacific Railroad, the Port of Seattle, and the U.S. Coast Guard, to discuss project effects and help our team refine the project design to minimize effects.

7 How have tribal governments been involved?

We understand that the project area has cultural and historic significance for local tribes. We seek to address the concerns of tribal nations using the process outlined in Section 106 of the National Historic Preservation Act and the WSDOT Tribal Consultation Policy adopted in 2003 by the Transportation Commission as part of the WSDOT Centennial Accord Plan⁷.

⁷WSDOT 2003

Section 106 requires federal agencies to consult with tribes where projects could affect tribal areas with historic or cultural significance. As such, we are consulting with tribes that have active cultural interests in the project area. These tribes are the Muckleshoot Indian Tribe, Snoqualmie Indian Tribe, Suquamish Tribe, Tulalip Tribes, and the Confederated Bands and Tribes of the Yakama Nation. We also coordinated with the Duwamish Tribe.

Since publication of the 2006 Supplemental Draft EIS, we have continued to communicate with tribes by providing project updates, coordinating and attending meetings, and soliciting feedback. We will continue to meet with the tribes throughout project development to provide project updates and consult per Section 106.

In addition to tribal consultation and coordination, the project team has conducted archaeological studies of the area to better understand where cultural sites or sensitive cultural resources may be located. As part of this work, we have used historical accounts and geotechnical information to identify high probability areas where archaeological resources may be located. The purpose of this work is to develop measures to avoid or minimize potential effects to archaeological resources before construction begins. We will use the information gathered from these studies as we work with the tribes and the Washington State Department of Archaeology and Historic Preservation (DAHP) to develop a monitoring and treatment plan for properly addressing any inadvertent discoveries

Section 4(f)

The Draft Section 4(f) Evaluation is included in this EA following Chapter 4.

found during construction. A Memorandum of Agreement will be made with the appropriate agencies. Any archaeological site encountered during construction that is historically significant would be subject to Section 4(f) provisions, unless it is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place.

8 What issues were identified as part of scoping?

As part of project scoping for this EA, we received a variety of comments from:

- 7 government agencies.
- 3 businesses.
- 49 individual citizens.

The purpose of the scoping process is to provide interested members of the public with an opportunity to provide input on the analysis and information presented in this EA. Information and comments gathered during project scoping were used to shape the environmental analysis and information contained in this EA. A wide variety of comments were received during scoping. Many reoccurring themes and questions were echoed by the commenters and are summarized below:

- **Alternatives Development** – How was the proposed Build Alternative developed and what other options were considered and screened? This topic is discussed throughout this chapter and is specifically addressed in Question 4.
- **Climate Change** – How is the project assessing potential effects related to greenhouse gas emissions? Greenhouse gas emissions are discussed in Chapter 3, Question 7.
- **Cumulative Construction Effects** – What are cumulative construction effects of this project and other planned projects such as SR 519 in the nearby area? How would general purpose traffic, transit, freight, bicyclists, and pedestrians be affected? What mitigation is planned? Cumulative construction effects and proposed mitigation are discussed in Chapter 4, Question 14.
- **Cumulative Operational Effects** – Once this project and others in the area are built, what are expected cumulative effects as they relate to land use and transportation for general purpose traffic, transit, freight, bicyclists, and pedestrians? Cumulative operational effects are discussed in Chapter 3, Question 8.

9 Are there any controversial issues?

Does the design for this project restrict alternatives that can be considered to replace SR 99 along the central waterfront?

Some people have expressed concern that the design for this project might restrict alternatives that can be considered along the central waterfront. The design for the S. Holgate Street to S. King Street Viaduct Replacement Project does not restrict the range of alternatives that are feasible for replacing SR 99 along Seattle's central waterfront. The proposed roadway design can connect to any number of transportation solutions in the central waterfront, including a surface street, a new elevated structure, or a tunnel.

How much traffic congestion would be caused by construction?

Many people have expressed concern about traffic congestion during construction, particularly along First Avenue S. Construction traffic effects are discussed in Chapter 4 of this EA. As discussed in Chapter 4, people traveling in and through the area would be affected by increased congestion during construction. However, it is important to note that these effects are expected to be short-term. Southbound SR 99 would be detoured for 6 months during Stage 2, and both directions of SR 99 would be detoured for 8 months during Stage 3. Furthermore, WSDOT has dedicated up to \$125 million to a variety of mitigation projects and efforts that will keep people and vehicles moving in, around, and through the area during construction of this project and other elements of the Alaskan Way Viaduct and Seawall Replacement Program. During construction, we plan to minimize disruption to the extent feasible by making it a priority to maintain traffic capacity on SR 99 as much as possible, minimizing traffic effects to First Avenue S., and maintaining access to and from area businesses and the stadiums.