



Top: Alaskan Way Viaduct from the south in Seattle
Above: Cracking on viaduct support beams

Above: Holes in the Seawall sheet pile wall

CHAPTER 1 - INTRODUCTION TO THE PROJECT

1 Why was the Alaskan Way Viaduct and Seawall Replacement Project initiated?

The Alaskan Way Viaduct (AWV) section of State Route (SR) 99 has been a fixture of the downtown Seattle waterfront for over five decades. Prior to the construction of Interstate 5 (I-5), SR 99 was the main north-south route to and through downtown Seattle. Today, SR 99 continues to be a main north-south route through the city, carrying 20 to 25 percent of the traffic traveling through downtown. However, the viaduct's days are numbered. Time, wear and tear from daily traffic, the salty marine air, and a couple of earthquakes have taken their toll on the facility.

Studies in the mid-1990s provided early evidence that the 1950s-era viaduct was nearing the end of its useful life. The viaduct's increasing age and vulnerability was apparent by crumbling concrete, exposed rebar, cracking concrete, weakening column connections, and deteriorating railings. In early 2001, a team of structural design and seismic experts began work to determine whether it was feasible and cost-effective to strengthen the viaduct by retrofitting it. In the midst of this investigation, the 6.8 magnitude Nisqually earthquake shook the Puget Sound region. The earthquake damaged the viaduct, forcing the Washington State Department of Transportation (WSDOT) to temporarily shut it down.

Post-earthquake inspections of the viaduct revealed both good and bad news concerning its condition. The good news was that the viaduct survived the 6.8 magnitude earthquake. The bad news was the earthquake caused damage to the viaduct's joints and columns, further weakening the structure and revealing its vulnerability. The team of experts concluded

that it was not cost-effective to fully retrofit the majority of the viaduct; rather, the viaduct would need to be rebuilt or replaced.

Immediate repairs were made to four viaduct sections in the Pioneer Square area near S. Washington Street. Also, WSDOT imposed roadway restrictions that remain in effect today. These restrictions are for large vehicles such as trucks and buses that weigh over 10,000 pounds. They include reduced travel speeds for large vehicles (from 50 miles per hour to 40 miles per hour) and require large vehicles to use only the right-hand lane of the viaduct. Ongoing inspections of the viaduct have revealed other increased cracks, exposed rebar, and weakening concrete; all signs that the viaduct is aging and continuing to deteriorate.

Shortly after the Nisqually earthquake, a 100-foot-long by 10-foot-wide section of the Alaskan Way surface street settled, raising concerns about the condition of the Alaskan Way Seawall.¹ The seawall holds the soil in place along Seattle's waterfront. The seawall also holds the Alaskan Way surface street and many utilities in place. The viaduct's foundations are also embedded in the soil held back by the seawall. If the seawall were to fail, sections of the viaduct, the Alaskan Way surface street, and adjacent structures and utilities could collapse or become unsafe.

Further investigations have been conducted to assess the seawall's condition. These investigations have shown that the seawall's condition is worse than expected and needs to be replaced. The seawall continues to deteriorate despite regular maintenance by the City of Seattle. Soils underneath the roadway moved and liquefied during the Nisqually earthquake. Liquefaction is what can happen to loose, wet soils

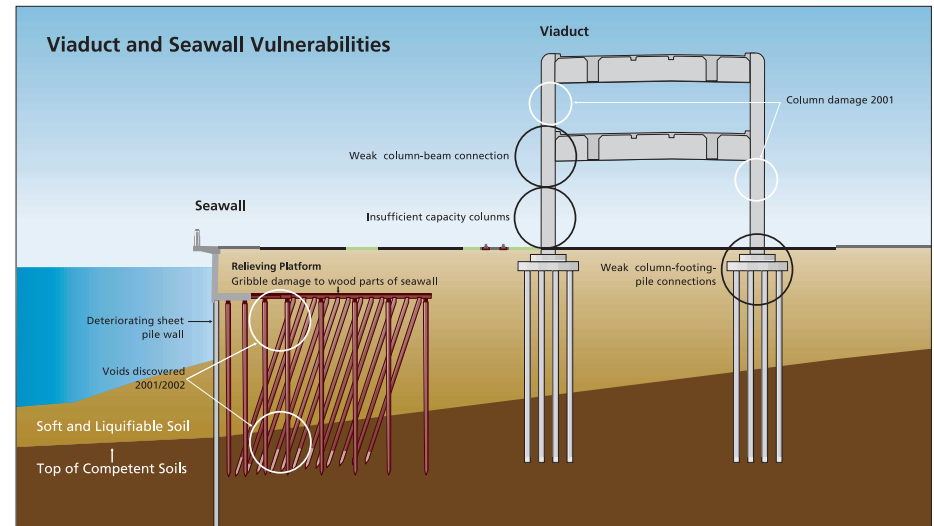


Exhibit 1-1

Above : Examples of *L. Limnoria* or gribbles

Left : Gribble damage to boards of the seawall relieving platform

¹ Seattle Times 2001

when shaking motion from an earthquake causes the soil to turn into a quicksand-like condition.

In addition, marine organisms called gribbles have been eating away at the timbers that support the seawall. Inspections have shown that substantial portions of the seawall's timber support structures have been weakened or destroyed by the gribbles.

The Nisqually earthquake highlighted the inevitable fact that the viaduct and seawall are nearing the end of their useful lives, and it's time to replace them.

2 Why do we need the Project?

The Alaskan Way Viaduct provides vital roadway capacity that cannot be provided elsewhere in the region if the structure becomes unavailable for any reason. The Alaskan Way Seawall supports the soils that hold up the viaduct, the Alaskan Way surface street, the Seattle waterfront, and other adjacent structures and utilities. Both the viaduct and seawall are nearing the end of their useful life span, are vulnerable to earthquakes, and are crucial to the continued viability of SR 99 as a primary north-south driver, transit, and freight travel route into and through Seattle. The viaduct is an essential facility to support commerce, especially for trade and manufacturing. With the usually congested I-5 as the other primary north-south route into and through Seattle, the Alaskan Way Viaduct serves as a vital route for drivers, transit providers and riders, and the freight community by linking several key areas, including Burien, West Seattle, Duwamish industrial area, downtown Seattle, Ballard and Interbay, Magnolia, and north Seattle.

When the viaduct was closed immediately after the Nisqually earthquake, traffic was forced to use I-5 and adjacent city streets, resulting in substantial congestion and travel delays. This unexpected traffic shift was a forecast for the region of a future when the viaduct and Alaskan Way surface street are permanently closed, either by deterioration or catastrophe, forcing the approximately 110,000 vehicles that daily use these roads to choose an alternate route. With the viaduct and surface street closed, commutes would be longer,

transit routes would be altered, and the delivery of goods and services would be delayed.

With the focus on the vulnerability of the viaduct and the seawall, and a need for the multiple transportation uses of SR 99 to continue in to the future, the purpose of this project is to replace both structures by providing a transportation facility and seawall with improved earthquake resistance that maintains or improves mobility and accessibility for people and goods along the existing Alaskan Way Viaduct Corridor.

3 Who is leading this Project?

The three lead agencies leading this project are WSDOT, the City of Seattle (City), and the Federal Highway Administration (FHWA). In brief, WSDOT owns the viaduct, the City owns the seawall and the Alaskan Way surface street, and FHWA provides roadway design guidance and environmental oversight.

4 Who will decide what will replace the viaduct and seawall and how can I be involved in this decision?

Ultimately, the three lead agencies will decide what will replace the viaduct and seawall. However, their decision will rely heavily on both technical information and community feedback. You are invited to participate in this project by reviewing the Draft Environmental Impact Statement (EIS), attending public meetings, and providing your comments on the information presented. The input you provide will help the lead agencies develop a preferred alternative.

The lead agencies look forward to hearing from you as they develop a solution to replace the viaduct and seawall before it is too late. The agencies are excited to continue to work with you to shape the future of transportation along the Seattle waterfront, much like the existing viaduct and seawall have shaped our past.



Above Top: Photo of column damaged in the Nisqually earthquake.

Above: Typical downtown traffic on Alaskan Way.

Project Purpose

The entire Project Purpose and Need statement is located at the end of this document.

How Can I Learn More About the Project and Provide Input?

There are several ways you can submit your comments or learn more about the project.

Public Hearings

You are invited to attend one of the meetings listed below:

Tuesday, April 27th
Dome Room, Arctic Building, Downtown
3rd Floor, 700 Third Avenue
4:00-7:00 p.m.

Wednesday, April 28th
Lafayette Elementary School, West Seattle
2645 California Avenue S.W.
5:00-8:00 p.m.

Thursday, April 29th
Leif Erickson Hall, Ballard
2245 N.W. 57th Street
5:00-8:00 p.m.

Phone, Website, and Email

To learn more about the project or submit your comments on the Draft EIS by phone, call 206.269.4421, or visit our website at www.wsdot.wa.gov/projects/viaduct/. Comments can be sent by e-mail to: awwdeiscomments@wsdot.wa.gov

Mailing Address

You can send written comments to the address below.

WSDOT
Attn: Allison Ray
999 Third Avenue, Suite 2424
Seattle, WA 98104

Your comments on the Draft EIS must be received by 5 p.m. on June 1st, 2004 to be considered.