

Alaskan Way Viaduct

Seattle, Washington

Description

The Alaskan Way Viaduct, an elevated section of State Route 99 (SR 99) along the Seattle waterfront, and the Battery Street Tunnel, an extension of SR99 north of the viaduct, were constructed in the early 1950s and were one of two north-south freeways traversing downtown Seattle. In some sections adjacent to downtown Seattle, the viaduct was a 40-foot-tall double-deck freeway. In 2011, the viaduct carried an average of 110,000 vehicles per day at Yesler Way. The Battery Street Tunnel carried an average of 60,000 vehicles per day. The Washington State Department of Transportation (WSDOT)



This is an aerial view of the Alaskan Way Viaduct prior to demolition. (Source: WSDOT)

replaced the Alaskan Way Viaduct and Battery Street Tunnel with a deep-bored tunnel extending from the Stadium District south of downtown to South Lake Union, which is north of downtown. The Alaskan Way Viaduct and Battery Street Tunnel officially closed on January 11, 2019 after the new SR99 bored tunnel opened to traffic.

The tunnel is envisioned to solve not only the Alaskan Way Viaduct and Battery Street Tunnel safety problems, but it will also allow better uses for waterfront real estate, including parks, housing, and retail developments.

Impetus for Right-sizing

The decision to replace the viaduct arose from a combination of physical infrastructure concerns and shifting political and public opinion about the best use of public space along Seattle's waterfront. In 2001, the 6.8-magnitude Nisqually Earthquake struck the Puget Sound region, resulting in damage and settlement on sections of the viaduct. Crews stabilized the structure, but engineers agreed that if the earthquake had lasted a few moments longer, the viaduct would have collapsed. Damage from the earthquake, along with cumulative wear and tear from decades of use, made replacing the viaduct critical to public safety.

Seattle residents and visitors alike saw the viaduct as a barrier that cut off the central waterfront from Seattle's downtown core and adjacent neighborhoods. The viaduct's size, bulk, concrete design, and the traffic noise conflicted with the character of the Pioneer Square Historic District, the pedestrian-oriented neighborhood along the central part of the waterfront, and the shops and offices on the west side of Belltown.

In 2011, Seattle residents supported the decision to demolish the viaduct and replace it with a boulevard via referendum, when nearly 60 percent of participating Seattle voters cast ballots in support of the project.

Design

The Alaskan Way Viaduct replacement includes multiple projects in addition to the demolition of the viaduct and tunnel construction. Led by WSDOT in partnership with King County, the city of Seattle, the Port of Seattle, and the Federal Highway Administration, major elements of the project include:

- A two-mile highway tunnel beneath downtown Seattle;
- A one-mile stretch of new highway that connects to the south entrance of the tunnel, near Seattle's Stadium District;
- A new overpass at the south end of downtown that allows traffic to bypass train blockages near Seattle's busiest port terminal;
- Demolition of the viaduct's downtown waterfront section; and
- A new Alaskan Way surface street along the waterfront that connects the new SR 99 to downtown.
- New SR99 access ramps north and south of downtown Seattle.
- New arterials connecting SR99 with Interstate 5 and Interstate 90 north of downtown at Mercer Street and south of downtown Atlantic Street.

In addition to these project elements, partner agencies are planning street, transit, and waterfront improvements, including a protected bicycle path, pedestrian promenade, waterfront park, and a new seawall.



These images illustrate a map of the Alaskan Way Viaduct teardown (top) and a map of projects done in conjunction with or enabled by the viaduct demolition (bottom). (Source: WSDOT, Waterfront Seattle)

Communication and Public Participation

WSDOT and its project partners used a variety of methods and tools to communicate with the public throughout the planning, design, and construction processes for the viaduct project. The agencies formed multiple committees, consisting of elected officials and appointed members of the community, whose goals were to provide input throughout the project timeline, and to share information with the community.

Community Outreach

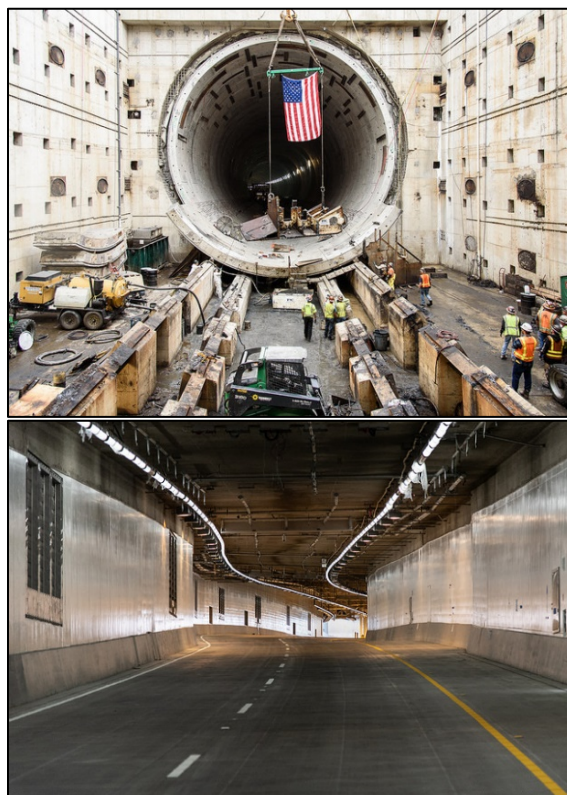
From the design phase through to construction, WSDOT presented project briefings at over 700 community meetings and attended more than 170 community events, reaching over 21,000 people. WSDOT also provided information via a monthly e-mail newsletter and the project website. The agency created print materials describing the project purpose and progress in English, Chinese, Spanish, Tagalog, and Vietnamese.

To address Section 106 of the National Historic Preservation Act WSDOT also funded an information center in a Pioneer Square storefront from 2011-2017. The award-winning “Milepost 31,” as it was named since it was near milepost 31 of SR 99, was a project information center that highlighted the people and projects that shaped the land that became Pioneer Square and provided an inside look at the SR 99 Tunnel Project.

In addition, WSDOT hosted a weekend celebration at the time of the opening of the SR 99 tunnel and closing of the viaduct. Events included pedestrian and bicyclist road races and public tours of the viaduct, which were attended by thousands of people. Attractions included an interactive scale model of the tunnel and a life-size mural of WSDOT’s tunnel boring machine, nicknamed “Bertha” after Seattle’s first female mayor, Bertha Knight Landes.

Coordination with Federal Agencies

Representatives from WSDOT shared that FHWA was instrumental in guiding and supporting the viaduct project, from planning through construction. Federal funds contributed about a quarter of the project’s overall budget, including emergency bridge replacement funding directed to maintain the structural integrity of the viaduct following the Nisqually earthquake up through tunnel construction. WSDOT and its partners also engaged FHWA to learn from previous projects, such as Boston’s Central Artery/Tunnel project. FHWA also assigned a specially-designated Project Oversight Manager to this project and the State Route 520 Floating Bridge Replacement projects throughout their life span. This helped WSDOT and its partners plan for risk.



The photos above show the Alaskan Way Viaduct Tunnel under construction (top) and completed (bottom). (Source: WSDOT)

Coordination with Tribes

WSDOT and its partner agencies led concerted efforts to engage and communicate with Indian Tribes by providing project updates, coordinating and attending meetings, sharing information, and soliciting feedback. The Tribes' questions and concerns focused primarily on potential historic and cultural resources located in the project area. The project team conducted archaeological studies of the area to better understand where archaeological sites or sensitive areas may be located to avoid or minimize potential impacts.

WSDOT and its partners engaged tribal leaders and representatives in the design of a new waterfront park from Pioneer Square to the Olympic Sculpture Park. The new park will incorporate indigenous history and culture, creating space for indigenous peoples to share their stories where both residents and visitors to Seattle can learn about native history.

Project Impact

Congestion and Traffic Flow

WSDOT expects the closure of the viaduct and the opening of the new tunnel to cause a large number of current downtown trips to redistribute, which will increase the duration of some trips and decrease the duration of others. Surface roads will provide access to vehicles, bicyclists, and pedestrians. Access along the Third Avenue transit spine in particular has been reconfigured to exclude most vehicles and prioritize transit, bicyclist, and pedestrian travel.

The SR 99 tunnel will provide a direct route between the Stadium District and Seattle Center. WSDOT estimated that, when the new Alaskan Way surface street is complete, the traffic that previously used the viaduct's midtown ramps to enter or exit downtown will instead use the new surface street. The project will also include a new road elevated above the waterfront railroad tracks that connects Elliott Avenue and Western Avenue with Alaskan Way, in order to avoid an at-grade railroad crossing. Tolling of the tunnel is expected to commence once demolition of the existing viaduct is completed (July 2019).

Economic Impact

According to the *Seattle Business Journal*, demolishing the viaduct and replacing it with an at-grade boulevard will result in significant growth in the downtown and waterfront areas. This will result in increased property values and new commercial and residential development along a newly accessible Seattle waterfront.



This image shows a proposed protected bike path after the Viaduct demolition. (Source: WSDOT).

Funding/Costs

WSDOT and its partner agencies used a variety of funding and financing strategies to generate the estimated \$3.3 billion needed for the project, described below:

- Federal funds – \$787.2 million
- State funds – \$2.1 billion
 - 2005 Gas Tax (Transportation Partnership Program) – \$1.5 million
 - 2003 Gas Tax (Nickel Funding) – \$326.3 million
 - Other State Funds – \$4.8 million
 - Tolls – \$200.0 million
- Local Improvement District property owner assessments and other local funds – \$28.4 million
- Port of Seattle – \$267.7 million



This is a rendering of the ground-level street that will take the place of the viaduct, opening up access between the waterfront and downtown. (Source: city of Seattle)

In addition to public dollars, the waterfront park and other public amenity projects connected with the demolition of the viaduct and the tunneling project received private funding through a variety of joint ventures and over \$100 million in philanthropic investment.

Related and Future Projects

The demolition of the Alaskan Way Viaduct and plans for its multimodal replacement have attracted more than \$700 million in public and private investment in new infrastructure, commercial and retail businesses, and public amenities. Waterfront Seattle, an organization led by the city of Seattle's Office of the Waterfront, identified the removal of the viaduct as an opportunity to create a vibrant public realm. In July 2012, the city of Seattle released a Concept Design, Framework Plan and Strategic Plan which includes new and improved pedestrian and bicycle infrastructure, a waterfront-facing expansion of the Pike Place Market, rehabilitation of Pier 62, expansion of the Seattle Aquarium, and a redesign of Waterfront Park, among other initiatives. Friends of Waterfront Seattle was formed as a non-profit partner to ensure strong, long lasting philanthropic stewardship for the new waterfront parks and facilities.

The Alaskan Way Viaduct had separated neighborhoods, limited economic development, and constrained mobility. The replacement of the viaduct, and its adjacent projects, have the potential to strengthen downtown Seattle through new commercial and economic development opportunities, both new and improved public infrastructure, and a cohesive connection to the city's waterfront.

For More Information

For more information on the Alaskan Way Viaduct project, visit www.wsdot.wa.gov/Projects/Viaduct.