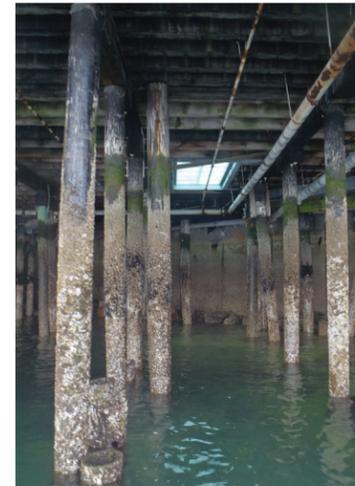


# Seawall habitat: The nearshore environment

When Seattle's waterfront was developed, Elliott Bay lost many of the habitat features associated with its native intertidal habitat, including sloping beaches, crevices, and vegetated hiding places for fish.

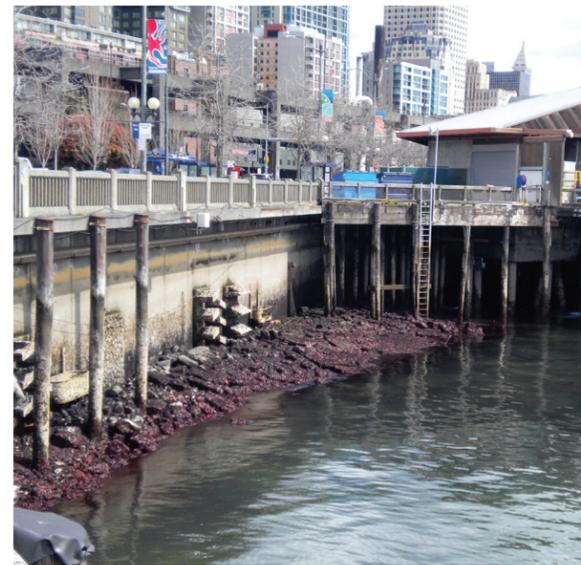


Restoring the salmon migration corridor and improving ecosystem productivity are important objectives of the Elliott Bay Seawall Project.

Test panels of glass, such as these shown from beneath Pier 62/63, are being studied for their effectiveness in transmitting light.

The City of Seattle is aiming to create an enhanced migratory corridor in four primary ways:

- 1. Provide more light** – Light penetrating surfaces, are being incorporated into the now cantilevered sidewalk to allow light to pass through to the water below. Added light will help support improved habitat for migratory juvenile salmon.
- 2. Create shallower habitat** – Intertidal habitat benches will provide a shallow water habitat with gravel surfaces to act as hiding and foraging places for aquatic life.
- 3. Incorporate more texture** – Habitat face of the new seawall has cobbled surfaces and shelves extending from the wall's surface to promote growth of vegetation and marine invertebrates—both important food sources for fish.
- 4. Provide riparian vegetation** – Native riparian vegetation will be planted along the seawall and at a newly constructed intertidal beach at the south end of the project area.



## For more information

Visit our website, provide your input, or contact us to hear about our latest activities.

Web: [www.seattle.gov/transportation/seawall.htm](http://www.seattle.gov/transportation/seawall.htm)  
 Email: [seawall@seattle.gov](mailto:seawall@seattle.gov)  
 Project Hotline: 206-618-8584

**Americans with Disabilities Act (ADA) Information:** Materials can be provided in alternative formats—large print, Braille, cassette tape, or on computer disk—for people with disabilities by contacting 206-618-8584, [seawall@seattle.gov](mailto:seawall@seattle.gov). Persons who are deaf or hard of hearing may make a request for alternative formats through the Washington Relay Service at 7-1-1.

# Elliott Bay Seawall Project

## What's happening now?

Starting in fall 2013, the City is beginning to replace the oldest and most vulnerable sections of the central seawall (between S. Washington and Virginia streets). To allow space for construction along the waterfront, a temporary roadway will be built, and is anticipated to be complete by January 2014. At that time, traffic from Alaskan Way will be routed underneath the viaduct. The roadway will remain in this condition until Elliott Bay Seawall Project completion in 2016.

When construction begins, the first activities you'll see are:

- Installation of safety fencing
- Mobilization of equipment and materials
- Removal of sidewalk on west side of Alaskan Way, installation of containment wall, and replacement of sidewalk
- Removal of parking beneath the Alaskan Way Viaduct

## Foundation of an improved waterfront

Beyond the Seawall Project, several significant state and City projects are in progress and planned for Seattle's waterfront. The following projects importantly address public safety but also will enhance and benefit the City and its historic waterfront:

- SR 99 Tunnel Project
- Waterfront Seattle
- Partner projects including Colman Dock, Seattle Aquarium and Pike Place Market renovations



## What is the Elliott Bay Seawall Project?

The Elliott Bay Seawall Project will replace the aging seawall along the waterfront and provide a once in a generation opportunity to improve habitat. Seawall replacement will protect public safety by addressing a structure that is vulnerable to erosive storms and waves, and earthquakes. The new seawall will be built to current seismic standards, designed to last more than 75 years, and is the foundation of Seattle's future waterfront.



# The original seawall

The original seawall is more than just the concrete face you see at the edge of the water. An estimated 20,000 untreated old growth trees were driven into the soil to build the structure. In some locations, like near the historic piers, the wall is approximately 60 feet wide, and reaches nearly to the footings of the Alaskan Way Viaduct.

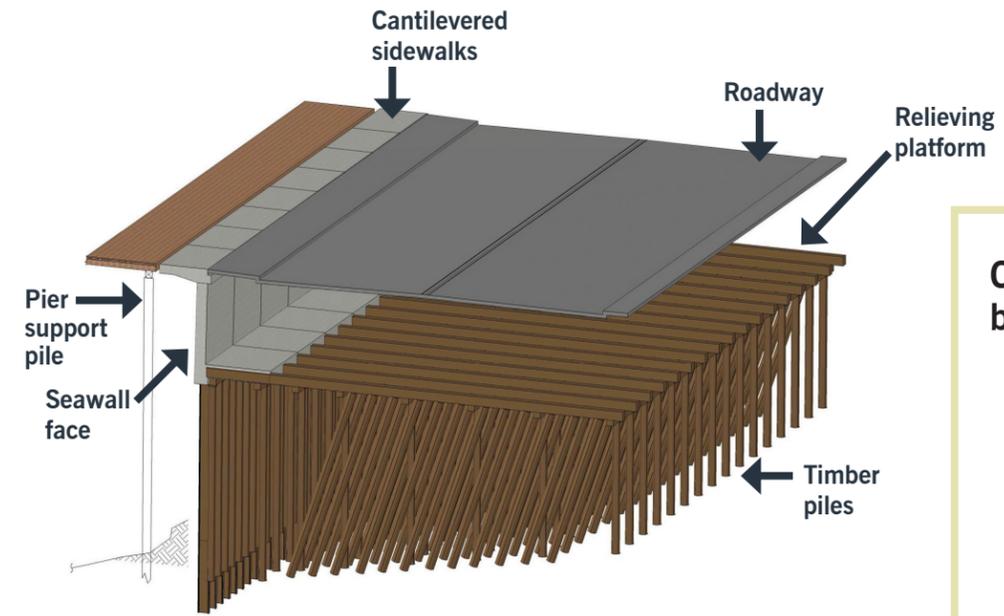


Seawall failure, 1954 (courtesy Seattle Municipal Archives).



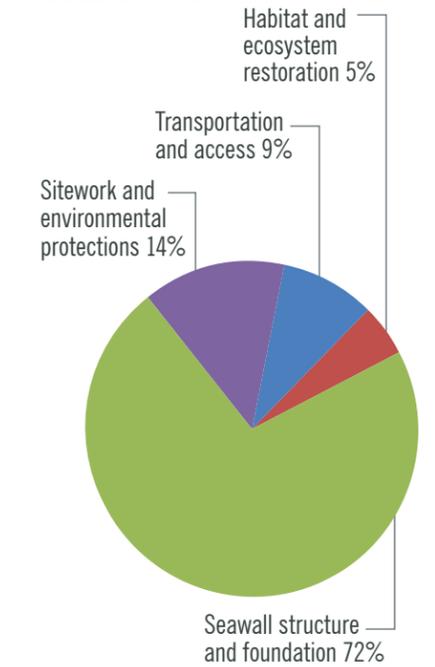
Near the Seattle Aquarium, the seawall is 40 feet wide (shown in blue).

The original seawall has protected Seattle's waterfront for more than 70 years, but time and a harsh marine environment have weakened the structure. Cracks within the face of the wall allow salt water and marine borers, called gribbles, to infiltrate and eat away the timber support. As the tide recedes through cracks in the wall, it carries with it fill soil that result in dangerous voids underneath the Alaskan Way roadway.



Model of the existing seawall.

## Construction cost breakdown



# The new seawall

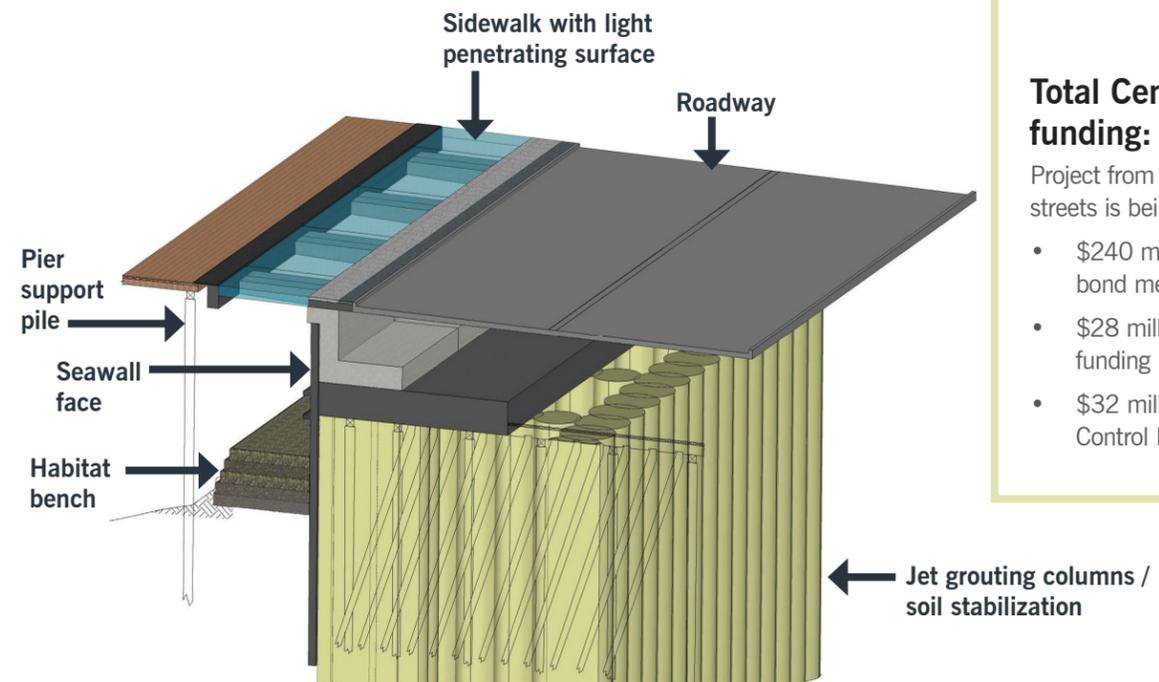
The new seawall will be built to current seismic standards and designed to last more than 75 years. The existing structure does not reach stable soil that would provide a solid foundation for the structure, so a construction technique called jet grouting will be used to stabilize the existing soil behind the seawall face. This will protect against soil liquefaction in the event of an earthquake.

The new face of the seawall will be built 10-15 feet eastward of its current location to accommodate construction and create additional space for habitat.

The Elliott Bay Seawall Project is designed to maintain flexibility for future opportunities. All surface features west of the restored sidewalk will be built in their final state at the completion of the seawall project. Elements east of the sidewalk, such as the roadway will be restored in an interim temporary condition and redesigned and rebuilt as part of the Waterfront Seattle project.



Schematic rendering of restored sidewalk and roadway.



Model of the new seawall.

## Total Central Seawall funding: \$300 million

Project from S. Washington to Virginia streets is being funded and includes:

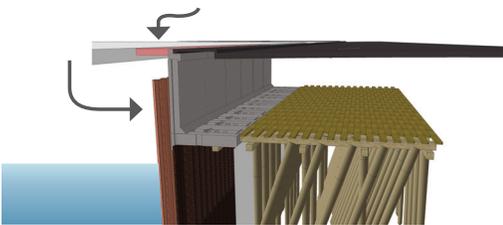
- \$240 million, City of Seattle public bond measure (November 2012)
- \$28 million, City of Seattle general funding
- \$32 million grant, King County Flood Control District

## Sequencing construction

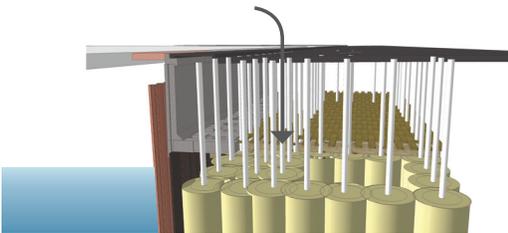
Regardless of location, building the seawall will include the following:

- Soil improvement (jet grouting)
- Demolition of the existing wall
- Installation of the new wall (which includes the new sidewalk with light penetrating surfaces).

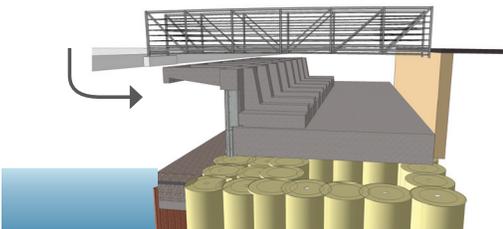
### 1 Remove sidewalk, install containment wall, and install temporary sidewalk



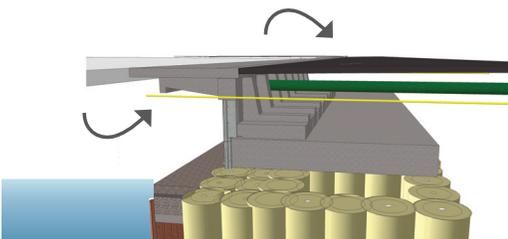
### 2 Begin jet grouting



### 3 Install new structure



### 4 Restore utilities, install final sidewalk and restored roadway



Building the new seawall will take several phases of construction, beginning this fall and wrapping up by spring 2016. This construction schedule was developed with a number of goals in mind:

- Accommodate waterfront businesses in the busy summer months
- Maximize parking and access on the waterfront
- Where possible, limit duration of construction impacts in front of waterfront businesses and residences
- Accommodate Washington State Ferries queuing at Colman Dock
- Coordinate timing with other waterfront projects, such as the SR 99 Tunnel Project

## What can you expect when construction starts?

- Your favorite waterfront attractions, businesses, and events are open and accessible.
- The neighborhood will be given as much advance notice as possible if night or weekend work is needed.
- A 24-hour hotline phone is available for project information.
- An up to date project website is available with our latest information – [www.seattle.gov/transportation/seawall.htm](http://www.seattle.gov/transportation/seawall.htm)

## Experiencing construction



We know that construction can be noisy, dirty, disruptive and ugly – but it can also present a unique opportunity to explore. Throughout construction, you will see a new system of wayfinding and information along the waterfront and throughout the city, all designed to help you navigate to and from the waterfront, and to

help you have a little fun once you get there.

### Did you know?

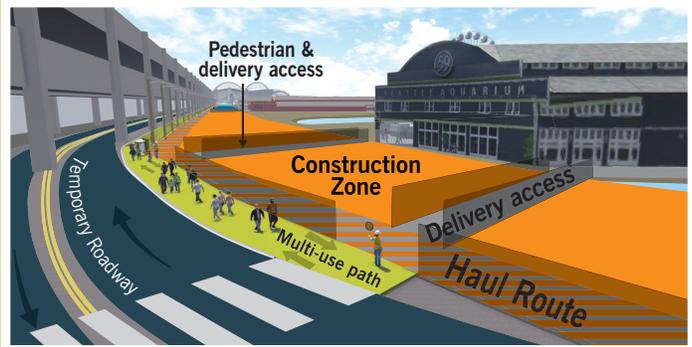
Jet grouting is a technique that stabilizes soil through injection of grout or cement into the ground. The grout is mixed with the existing soils to form a solid foundation. Jet grouting is an effective method of stabilization for an urban setting, as shown in this image from downtown Pittsburgh, PA.



# Getting to the waterfront

SDOT is committed to ensuring that the public can access the waterfront during construction. Access routes will vary, but watch for:

- Clear and robust wayfinding
- A temporary roadway under the viaduct for traffic
- Clear pedestrian and bicycle routes
- East/west access across Alaskan Way in key locations
- Temporary fencing around construction areas to ensure public safety
- Signage for parking in and around the waterfront



Looking south from Pike Street

In preparation for the placement of the new seawall structure, large excavations are required. Temporary vehicle and pedestrian bridges will be installed to maintain east/west travel and access to the waterfront piers.



## A place to park

Wondering where you can find parking during construction? Visit [downtownseattleparking.com](http://downtownseattleparking.com) for the latest information and promotions.

206-618-8584

[seawall@seattle.gov](mailto:seawall@seattle.gov)



Call with questions or comments



Weekly email updates and project updates from the street team

[seawall@seattle.gov](mailto:seawall@seattle.gov)



Email to ask us questions

via Waterfront Seattle



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## Season 1: Construction start up (September 2013)

