

Chapter 1

Project Purpose and Need

The Seattle Department of Transportation (SDOT) is replacing the Elliott Bay Seawall along the city of Seattle’s downtown waterfront. A State Environmental Policy Act (SEPA) Environmental Impact Statement (EIS), completed in March 2013, evaluated a range of alternatives for the project, which seeks to reduce the risks of coastal storm and seismic damage to the seawall, protect critical infrastructure and economic activity along the waterfront, and enhance degraded ecosystem functions in Elliott Bay. The EIS identified a Preferred Alternative (Alternative C) for seawall replacement.

After completion of the EIS, SDOT received permits to construct the Preferred Alternative from regulatory agencies, and construction of the new seawall began in November 2013. Since publication of the Final EIS in March 2013, the project design and schedule have evolved. This Supplemental EIS (SEIS) evaluates proposed changes in project design and construction compared to what was described in the original EIS.

This introductory chapter provides a brief history of the environmental review process for the Elliott Bay Seawall Project, explains why the project is needed, and discusses the project’s objectives. In addition, it describes why this SEIS is being prepared and notes the regulatory approvals required for project implementation.

1.1 Lead Agency

The City of Seattle (City) is the sponsor of the project and lead agency for SEPA compliance. The City issued a SEPA Determination of Significance on May 27, 2010. A Draft EIS, evaluating three build alternatives (Alternatives A, B, and C), was published in November 2012. A Final EIS, including responses to public comments, was published in March 2013. Alternative C was identified as the Preferred Alternative in both the Draft and Final EIS. This document supplements the Final EIS.

The Preferred Alternative, as modified through this SEIS, has been determined to: (1) meet the project purpose and need; (2) meet environmental and other regulatory requirements; and (3) be feasible and constructible.

1.2 Project Purpose

The purpose of the Elliott Bay Seawall Project is to reduce the risks of coastal storm and seismic damage and to protect public safety, critical infrastructure, and associated economic activities along the downtown Seattle waterfront. The project will also improve the degraded



Existing seawall

Washington State Environmental Policy Act (SEPA)

SEPA (Revised Code of Washington, Chapter 43.21C) was established in 1971 to provide a framework for agencies to consider the environmental consequences of a proposal before taking action. SEPA requires that state and local government agencies “utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man’s environment.”

SEPA ensures that “...environmental amenities and values will be given appropriate consideration in decision making along with economic and technical considerations...” (Revised Code of Washington 43.21C.030 (2)(a) and (2)(b)).

ecosystem functions and processes of the Elliott Bay nearshore in the vicinity of the seawall.

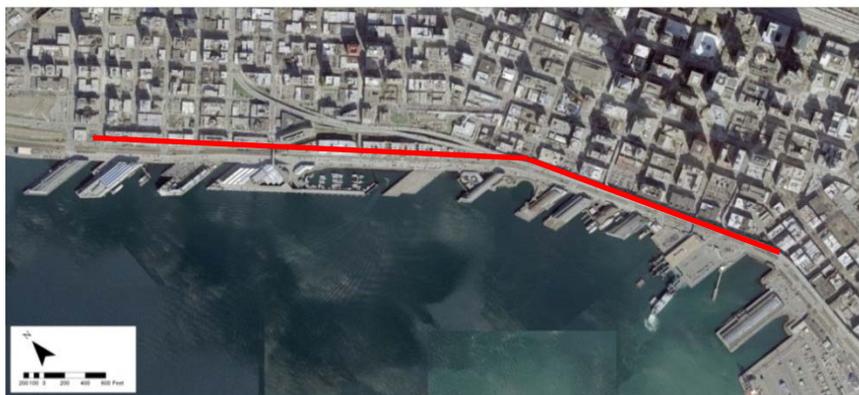
1.3 Need for the Project

Protection from Damage Due to Storms, Erosion, and Seismic Activity

The Elliott Bay Seawall holds soils in place along the downtown Seattle waterfront and supports the Alaskan Way surface street and numerous utilities embedded in the soil behind the wall. Due to age, tidal influences, and the corrosive nature of the marine environment, the seawall is reaching the end of its useful life. The supporting timber elements of the structure have experienced significant decay and deterioration as a result of coastal storm damage, leading to instability. Active maintenance of the seawall has prolonged its functional life, but cumulative and irreparable coastal storm damage over recent years has resulted in a structure that is at risk of failure.



Seawall damage at foot of S. Washington Street, 1986 (Source: Seattle P-I Archives)



Aerial view of downtown Seattle waterfront, 2009 (red line indicates approximate location of Elliott Bay Seawall)

The existing seawall protects the downtown Seattle waterfront from wind-driven storm waves and the erosive tidal forces of Puget Sound. Since the seawall was constructed (primarily from 1911 to 1936), continued exposure to storm waves and tidal forces has resulted in damage to the underlying structures. This damage is expected to continue and further compromise the structure’s ability to protect the shoreline and adjacent infrastructure.

In addition to continued damage from coastal storms and tides, the seawall is also vulnerable to damage or collapse as a result of seismic events. If the seawall is structurally compromised or destroyed by seismic activity, the loss of shoreline protection will result in increased exposure of the shoreline to wave, tidal, and storm action, with consequent additional erosion and property damage.

Failure of the seawall would pose a high risk to public safety and could cause substantial environmental degradation. A catastrophic collapse of

City of Seattle’s Goals for the Elliott Bay Seawall Project

- Address critical structural public safety needs at the shoreline
- Respect cultural, archaeological, and historic resources
- Consider long-term vision for the Central Waterfront
- Provide enhanced habitat and environmental quality
- Provide enhanced public gathering and recreational opportunities
- Support the economic vitality of the waterfront
- Minimize cumulative construction impacts
- Support fiscal responsibility

the seawall could result in erosion of the shoreline 70 to 140 feet landward, with subsequent flooding and damage to public and private infrastructure worth billions of dollars. Such a collapse would destroy critical highway, ferry, and rail infrastructure, as well as damage and interrupt utility services (including water, electricity, natural gas, steam, communications, sanitary sewers, and stormwater drainage) throughout the downtown area and, in some cases, regionally. Numerous commercial, public, and residential structures and facilities, including the Colman Dock Ferry Terminal, Fire Station No. 5, the Seattle Aquarium, the Port of Seattle, and the historic piers, could be seriously damaged or destroyed by a complete or partial failure of the seawall. Residents, workers, pedestrians, bicyclists, and motorists in the vicinity of a failure could sustain severe injuries and/or loss of life.

Improvement of Nearshore Habitat

The Elliott Bay ecosystem is significantly degraded. Industrial and urban development around Elliott Bay over the last 150 years has resulted in large-scale hydrologic alterations, deforestation, filling of nearshore habitat, and contamination. Restoring degraded nearshore habitat will increase the quality and quantity of habitat areas for several species of salmon, including three that are currently listed under the Endangered Species Act, as well as many other diverse species that live in the bay.

Elliott Bay is an important link for salmon migrating from the Duwamish River to the Pacific Ocean. The vertical face of the existing seawall provides poor habitat for the juvenile salmon that travel along the downtown Seattle waterfront during their critical outmigration period. Studies show that the incorporation of nearshore seawall enhancements at the shoreline, sea floor, and vertical seawall face can improve nearshore habitat and ecosystem processes that support aquatic life; therefore, reconstruction of the seawall offers a unique opportunity to improve Elliott Bay's nearshore habitat.

Support for Downtown Seattle Waterfront Plans

Improvements to the seawall must support the existing activities and land use plans for the downtown Seattle waterfront, which has evolved from a working waterfront characterized by shipping, warehouse, and industrial uses to an important transportation corridor and a center for tourism and recreation. The waterfront now hosts a vibrant mix of uses, including offices, retail shops, hotels, residences, a conference center, an aquarium, museums, parks, a cruise ship terminal, a ferry terminal, and various types of commercial and recreational moorage.

As described in Chapter 2, the City is currently planning improvements separate from the seawall that will enhance the character of the downtown waterfront. Although the Elliott Bay Seawall Project offers utility independent of these other waterfront improvement projects, its design incorporates opportunities for improving access to the water,

Infrastructure at Risk from Seawall Failure

- Alaskan Way and the Alaskan Way Viaduct
- Colman Dock Ferry Terminal
- BNSF Railway main line
- Water, electricity, natural gas, and steam lines
- Communication lines
- Sanitary sewers and stormwater drainage systems
- Fire Station No. 5
- Seattle Aquarium
- Port of Seattle
- Historic waterfront piers and buildings



Nearshore habitat along existing seawall, 2011



Restored nearshore habitat at Olympic Sculpture Park just north of project area (Source: Toft et al., 2010)

and public use features consistent with the City's vision for the waterfront have been considered in developing the project.

1.4 Project Area

The Elliott Bay Seawall Project will replace the seawall and enhance nearshore habitat from S. Washington Street to Broad Street along the Seattle waterfront abutting Elliott Bay. For the purposes of this environmental review, the project area is defined as the area that could be directly affected by coastal storm and tidal damage, including potential failure of the existing seawall and subsequent shoreline erosion. This area is generally bounded by S. Main Street on the south, Broad Street on the north, Elliott/Western Avenues on the east, and Elliott Bay on the west.

1.5 Environmental Review Process

The requirements of SEPA and the Seattle Municipal Code, Chapter 25.05 [SMC 25.05] apply to the Elliott Bay Seawall Project. The City—as the project sponsor and SEPA lead agency—is responsible for carrying out SEPA procedural requirements and compiling and assessing information on all of the environmental aspects of the proposed action. The City is also the agency responsible for the preparation and content of the SEPA EIS.

In the Final EIS, the City evaluated three build alternatives and a No Action Alternative. The Preferred Alternative was carried forward into final design, permitting, and contracting. Construction began in November 2013 and is proceeding in a manner consistent with the analysis in the Final EIS. Since issuance of the Final EIS, however, the City has identified several potential changes that could increase the efficiency of construction and reduce impacts on waterfront business owners. These changes, which are a result of design refinements, adjustments in construction sequencing and approach, and agreements made through the permitting process, are described in Chapter 2.

The City determined that the proposed changes to project design and construction have the potential to result in significant adverse impacts that were not evaluated in the Final EIS. Under the City's SEPA rules (SMC 25.05.600), supplemental environmental analysis is required; thus, the City has initiated this SEIS. This SEIS does not include actions, analysis, or impacts that were already covered in the EIS, but focuses on those elements that have changed and identifies where impacts differ from those of the original proposal. The SEIS also provides an opportunity to describe the relationship of this project to other proposals along and near the waterfront.

1.6 Permits, Licenses, and Other Consultations

In addition to SEPA, the Elliott Bay Seawall Project must comply with the federal, state, and local laws, regulations, and approvals shown below. It must also take into account the plans and policies described in Chapter 7 of the EIS and in Chapter 5 of this SEIS.

- Clean Water Act (Sections 401, 402, and 404)
- Rivers and Harbors Act (Section 10)
- Endangered Species Act
- Marine Mammal Protection Act
- Magnuson-Stevens Fishery Conservation and Management Act
- Bald and Golden Eagle Protection Act
- Coastal Zone Management Act (CZMA)
- Clean Air Act
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- American Indian Religious Freedom Act
- Uniform Relocation Assistance and Real Property Acquisition Policies Act
- Shoreline Management Act
- Model Toxics Control Act
- Washington Hydraulic Code
- Aquatic Land Use Authorization or Easement
- King County Industrial Waste Discharge Permit or Authorization
- Seattle Land Use Code
- Seattle Building Code
- Seattle Shoreline Code
- Seattle Noise Ordinance
- Local Historic Preservation Approval
- Seattle Stormwater Code
- Seattle Environmentally Critical Areas Code

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