

Land Use, Shorelines, and Parks and Recreation Discipline Report

FINAL

October 2012

Submitted to:



City of Seattle
Department of Transportation
700 5th Avenue, Suite 3900
Seattle WA 98124

Prepared by:
Tetra Tech, Inc.



Elliott Bay Seawall Project

LAND USE, SHORELINES, AND PARKS AND RECREATION DISCIPLINE REPORT

Agreement No. T09-24

FINAL

OCTOBER 2012

This Discipline Report provides detailed background and analysis to support the City of Seattle's SEPA (Washington State Environmental Policy Act) Environmental Impact Statement for the Elliott Bay Seawall Project. This report also serves the same role to support the USACE's NEPA (National Environmental Policy Act) environmental analysis for the Elliott Bay Seawall Project. Thus, both SEPA and NEPA references and considerations are included.

To conduct this project, SDOT contracted with:

Tetra Tech, Inc.

1420 5th Avenue, Suite 550
Seattle WA 98101

In association with:

Anchor QEA
BergerABAM
Coast & Harbor
EnviroIssues
Fehr & Peers
Floyd|Snider
GHD
JA Brennan
LPES
Magnusson Klemencic Associates
Mimi Sheridan
Nelson\Nygaard
Power Engineers
Risk Strategics
Shannon & Wilson
SWCA Environmental Consultants
Washington2 Advocates
William P. Ott Construction Consultants
ZGF Architects

City of Seattle
Land Use, Shorelines, and Parks and Recreation Discipline Report

TABLE OF CONTENTS

Title	Page No.
Executive Summary	ES-1
Consistency with Plans and Policies.....	ES-1
Land Use and Shoreline Impacts.....	ES-2
Parks and Recreation Impacts.....	ES-3
Construction.....	ES-3
Operational.....	ES-4
 CHAPTER 1. Project Description	 1
1.1 Project Background	1
1.2 Project Area Limits and Zones	2
1.3 Project Alternatives	3
1.4 No Action Alternative	3
1.5 Design Features Common to the Build Alternatives	4
1.5.1 Seawall.....	5
1.5.2 Habitat Improvements	5
1.5.3 Upland Improvements.....	6
1.6 Project Construction.....	7
1.6.1 Construction Schedule	7
1.6.2 Temporary Roadway and Construction Work Zone.....	7
1.6.3 Construction Methods.....	8
1.6.3.1 Soil Improvement	9
1.6.3.2 Braced Soldier Piles	9
1.6.4 Soil Dewatering and Spoils Disposal.....	9
1.6.5 Utility Protection and/or Relocation	10
1.7 Build Alternatives	11
1.7.1 Alternative A.....	11
1.7.1.1 Seawall.....	11
1.7.1.2 Roadway	11
1.7.1.3 Habitat Improvements	12
1.7.1.4 Upland Improvements.....	12
1.7.1.5 Construction and Schedule.....	12
1.7.2 Alternative B.....	15
1.7.2.1 Seawall.....	15
1.7.2.2 Roadway	15
1.7.2.3 Habitat Improvements	15
1.7.2.4 Upland Improvements.....	16
1.7.2.5 Construction and Schedule.....	16
1.7.3 Alternative C.....	19
1.7.3.1 Seawall.....	19
1.7.3.2 Roadway	19
1.7.3.3 Habitat Improvements	19

1.7.3.4	Upland Improvements.....	20
1.7.3.5	Construction and Schedule.....	20
CHAPTER 2.	Methodology.....	35
2.1	Land Use and Shorelines.....	35
2.2	Parks and Recreation.....	36
2.3	Secondary (Indirect) Impacts Methodology.....	36
CHAPTER 3.	Coordination and Information Sources.....	37
3.1	Information Sources.....	37
3.2	Coordination.....	38
CHAPTER 4.	Affected Environment.....	39
4.1	Land Use and Shorelines.....	39
4.1.1	Existing Land Uses.....	39
4.1.1.1	S. Washington Street to Virginia Street (Central Seawall Study Area).....	39
4.1.1.2	Virginia Street to Broad Street (North Seawall Study Area).....	39
4.1.1.3	Residential/Non-Residential Mix.....	42
4.1.2	Recent and Planned Development.....	43
4.1.3	Zoning.....	44
4.1.4	Special Districts.....	46
4.1.4.1	Pioneer Square Preservation District.....	46
4.1.4.2	Pike Place Market Historical District.....	46
4.1.5	Plans and Policies.....	47
4.1.5.1	Federal Plans and Policies.....	47
4.1.5.2	State Plans and Policies.....	46
4.1.5.3	Regional and Local Plans and Policies.....	49
4.2	Parks and Recreation.....	56
4.2.1	Parks and Recreation Facilities.....	56
4.2.1.1	Waterfront Bicycle and Pedestrian Path.....	57
4.2.1.2	Waterfront Promenade.....	57
4.2.1.3	Washington Street Public Boat Landing.....	59
4.2.1.4	Colman Dock Ferry Terminal – Pier 52 (Shoreline Public Access).....	59
4.2.1.5	Fire Station No. 5 (Shoreline Public Access).....	60
4.2.1.6	Pier 54 (Shoreline Public Access).....	60
4.2.1.7	Pier 55 (Public Access to Blake Island/Tillicum Village).....	60
4.2.1.8	Piers 55 and 56 (Shoreline Public Access).....	61
4.2.1.9	Pier 57 (Shoreline Public Access).....	61
4.2.1.10	Waterfront Park.....	61
4.2.1.11	Pier 59 and Seattle Aquarium.....	62
4.2.1.12	Pier 62/63.....	62
4.2.1.13	Pier 66 (Shoreline Public Access).....	63
4.2.1.14	Edgewater Hotel (Shoreline Public Access).....	63
4.2.1.15	Pier 69 (Shoreline Public Access).....	63
4.2.1.16	Pier 70 (Shoreline Public Access).....	64
4.2.1.17	Olympic Sculpture Park.....	64
4.2.1.18	Lake to Bay Loop Trail.....	64

4.2.2	Green Streets.....	65
4.2.3	Public Art	65
4.2.3.1	Joshua Green Fountain.....	65
4.2.3.2	Ivar Feeding the Gulls	65
4.2.3.3	Christopher Columbus	65
4.2.3.4	Waterfront Whimsea.....	65
4.2.3.5	Waterfront Fountain	65
4.2.3.6	Piers 62/63.....	66
4.2.3.7	Welcoming Spirit	66
4.2.3.8	Light Tower	66
4.2.3.9	Danza Del Cerchio.....	66
4.2.3.10	Growing Vine Street	66
4.2.3.11	Father and Son.....	66
4.2.4	Plans and Policies	66
4.2.4.1	Seattle Parks and Recreation Development Plan.....	66
4.2.4.2	Port of Seattle Parks and Recreation Access Guide	67
4.2.4.3	Central Waterfront Concept Design and Framework Plan.....	67
CHAPTER 5.	Construction Effects and Mitigation	69
5.1	Land Use and Shorelines.....	69
5.1.1	No Action Alternative	69
5.1.2	Alternative A.....	69
5.1.2.1	Central Seawall (S. Washington to Virginia Streets).....	69
5.1.2.2	North Seawall (Virginia to Broad Streets).....	70
5.1.3	Alternative B.....	71
5.1.3.1	Central Seawall (S. Washington to Virginia Streets).....	71
5.1.3.2	North Seawall (Virginia to Broad Streets).....	72
5.1.4	Alternative C.....	72
5.1.5	Mitigation Measures	72
5.2	Parks and Recreation	73
5.2.1	No Action Alternative	73
5.2.2	Alternative A.....	73
5.2.2.1	Central Seawall (S. Washington to Virginia Streets).....	73
5.2.2.2	North Waterfront (Virginia to Broad Streets)	76
5.2.2.3	General	77
5.2.3	Alternative B.....	77
5.2.3.1	Central Seawall (S. Washington to Virginia Streets).....	77
5.2.3.2	North Waterfront (Virginia Street to Broad Street)	79
5.2.3.3	General	79
5.2.4	Alternative C.....	80
5.2.5	Mitigation Measures	80
CHAPTER 6.	Operational Effects and Mitigation.....	83
6.1	Land Use and Shorelines.....	83
6.1.1	No Action Alternative	83
6.1.2	Effects Common to the Build Alternatives	84
6.1.3	Alternative A.....	84
6.1.4	Alternative B.....	84
6.1.5	Alternative C.....	85

6.1.6	Indirect Effects	85
6.1.7	Mitigation Measures	86
6.2	Parks and Recreation	86
6.2.1	No Action Alternative	86
6.2.2	Alternative A.....	86
6.2.2.1	Waterfront Bicycle and Pedestrian Trail	87
6.2.2.2	Waterfront Promenade	87
6.2.2.3	Washington Street Boat Landing.....	87
6.2.2.4	Colman Dock Ferry Terminal (Shoreline Public Access)	87
6.2.2.5	Fire Station No. 5 (Shoreline Public Access)	87
6.2.2.6	Pier 54 (Shoreline Public Access).....	87
6.2.2.7	Pier 55 (Public Access to Blake Island/Tillicum Village).....	87
6.2.2.8	Piers 55 and 56 (Shoreline Public Access)	87
6.2.2.9	Pier 57 (Shoreline Public Access).....	87
6.2.2.10	Waterfront Park.....	88
6.2.2.11	Pier 59 and Seattle Aquarium.....	88
6.2.2.12	Pier 62/63	88
6.2.2.13	Pier 66, Shoreline Public Access	88
6.2.2.14	Edgewater Hotel (Shoreline Public Access).....	88
6.2.2.15	Pier 69 (Shoreline Public Access).....	88
6.2.2.16	Pier 70 (Shoreline Public Access).....	88
6.2.2.17	Olympic Sculpture Park	88
6.2.2.18	Lake to Bay Loop Trail.....	89
6.2.2.19	Green Streets.....	89
6.2.2.20	Public Art	89
6.2.2.21	Indirect Effects.....	89
6.2.3	Alternative B.....	89
6.2.3.1	Waterfront Bicycle and Pedestrian Path	89
6.2.3.2	Waterfront Promenade	89
6.2.3.3	Washington Street Boat Landing.....	90
6.2.3.4	Colman Dock Ferry Terminal (Shoreline Public Access)	90
6.2.3.5	Fire Station No. 5 (Shoreline Public Access)	90
6.2.3.6	Pier 54 (Shoreline Public Access).....	90
6.2.3.7	Pier 55 (Public Access to Blake Island/Tillicum Village).....	90
6.2.3.8	Piers 55 and 56 (Shoreline Public Access)	90
6.2.3.9	Pier 57 (Shoreline Public Access).....	90
6.2.3.10	Waterfront Park.....	91
6.2.3.11	Pier 59 and Seattle Aquarium.....	91
6.2.3.12	Pier 62/63	91
6.2.3.13	Pier 66, Shoreline Public Access	91
6.2.3.14	Edgewater Hotel (Shoreline Public Access).....	91
6.2.3.15	Pier 69 (Shoreline Public Access).....	91
6.2.3.16	Pier 70 (Shoreline Public Access).....	91
6.2.3.17	Olympic Sculpture Park	92
6.2.3.18	Lake to Bay Loop Trail.....	92
6.2.3.19	Green Streets.....	92
6.2.3.20	Public Art	92
6.2.3.21	Indirect Effects.....	92

6.2.4	Alternative C.....	92
6.2.4.1	Waterfront Bicycle and Pedestrian Path	92
6.2.4.2	Waterfront Promenade	92
6.2.4.3	Washington Street Boat Landing.....	93
6.2.4.4	Colman Dock Ferry Terminal (Shoreline Public Access)	93
6.2.4.5	Fire Station No. 5 (Shoreline Public Access)	93
6.2.4.6	Pier 54 (Shoreline Public Access).....	93
6.2.4.7	Pier 55 (Public Access to Blake Island/Tillicum Village).....	93
6.2.4.8	Piers 55 and 56 (Shoreline Public Access)	93
6.2.4.9	Pier 57 (Shoreline Public Access).....	93
6.2.4.10	Waterfront Park.....	93
6.2.4.11	Pier 59 and Seattle Aquarium.....	93
6.2.4.12	Pier 62/63	94
6.2.4.13	Pier 66, Shoreline Public Access	94
6.2.4.14	Edgewater Hotel (Shoreline Public Access).....	94
6.2.4.15	Pier 69 (Shoreline Public Access).....	94
6.2.4.16	Pier 70 (Shoreline Public Access).....	94
6.2.4.17	Olympic Sculpture Park	94
6.2.4.18	Lake to Bay Loop Trail.....	94
6.2.4.19	Green Streets.....	94
6.2.4.20	Public Art	94
6.2.5	Indirect Effects	94
6.2.6	Mitigation Measures	95
6.2.6.1	Alternative A.....	95
6.2.6.2	Alternative B.....	95
6.2.6.3	Alternative C.....	95
CHAPTER 7. Consistency with Plans and Regulations		97
7.1.1	Federal Laws and Regulations	97
7.1.1.1	Clean Water Act (Section 401 and 404) (Pub. L. No. 92-500).....	97
7.1.1.2	Rivers and Harbors Act	97
7.1.1.3	Coastal Zone Management Act	97
7.1.2	State and Local Laws and Regulations.....	97
7.1.2.1	Shoreline Management Act.....	97
7.1.2.2	Washington Hydraulic Code	98
7.1.2.3	Aquatic Land Use Authorization	98
7.1.2.4	Puget Sound Regional Council VISION 2040 and Transportation 2040	99
7.1.2.5	Seattle Comprehensive Plan.....	99
7.1.2.6	Downtown Urban Center Neighborhood Plan	105
7.1.2.7	Pioneer Square Neighborhood Plan	105
7.1.2.8	Commercial Core Neighborhood Plan.....	106
7.1.2.9	Belltown Neighborhood Plan	106
7.1.2.10	Concept Design and Framework Plan for Seattle’s Central Waterfront.....	106
7.1.2.11	Transportation-Related Plans and Guidance.....	107
7.1.2.12	Seattle Environmentally Critical Areas Code	107
7.1.2.13	Seattle Parks and Recreation Development Plan.....	107

7.1.2.14 Port of Seattle Shoreline Plan..... 108
CHAPTER 8. References 109

LIST OF TABLES

No.	Title	Page No.
Table 1-1.	Comparison of Features of the Three Elliott Bay Seawall Project Build Alternatives	23
Table 4-1.	Land Use by Subcategory in the Elliott Bay Seawall Project Study Area	42
Table 6-1.	Operational Activities by No Action Scenario	83

LIST OF FIGURES

No.	Title	Page No.
Figure 1-1.	Elliott Bay Seawall Project Area	1
Figure 1-2.	Elliott Bay Seawall Zone Designations.....	2
Figure 1-3.	Conceptual Rendering of Proposed Habitat Improvements.....	6
Figure 1-4.	Construction Work Zone and Temporary Roadway.....	8
Figure 1-5.	Representative Cross Section Showing Typical Existing Utility Locations within Project Limits.....	10
Figure 1-6.	Alternative A, Stage 1.....	13
Figure 1-7.	Alternative A, Stage 2.....	13
Figure 1-8.	Alternative A, Stage 3.....	14
Figure 1-9.	Alternative A, Stage 4.....	14
Figure 1-10.	Alternative B, Stage 1.....	17
Figure 1-11.	Alternative B, Stage 2.....	17
Figure 1-12.	Alternative B, Stage 3.....	18
Figure 1-13.	Alternative B, Stage 4.....	18
Figure 1-14.	Alternative C, Stage 1.....	21
Figure 1-15.	Alternative C, Stage 2.....	21
Figure 1-16.	Alternative C, Stage 3.....	22
Figure 1-17.	Alternative C, Stage 4.....	22
Figure 1-18.	Alternative A: Central Seawall Plan.....	27
Figure 1-19.	Alternative A: North Seawall Plan	28
Figure 1-20.	Alternative B: Central Seawall Plan, Option 1.....	29
Figure 1-21.	Alternative B: Central Seawall Plan, Option 2.....	30
Figure 1-22.	Alternative B: North Seawall Plan	31
Figure 1-23.	Alternative C: Central Seawall Plan.....	32
Figure 1-24.	Alternative C: North Seawall Plan	33
Figure 4-1.	Elliott Bay Seawall Project Land Use Study Urban Village Boundaries	40
Figure 4-2.	Existing Land Use and Shoreline Environments in the Elliott Bay Seawall Project Vicinity.....	41
Figure 4-3.	Total Parcel Area by Land Use in the Elliott Bay Seawall Project Study Area	43
Figure 4-4.	Zoning Map for the Elliott Bay Seawall Project Land Use Study Area and Vicinity.....	45
Figure 4-5.	Parks, Recreation, and Public Access Facilities in the Elliott Bay Seawall Project Study Area.....	58

ACRONYMS, ABBREVIATIONS AND DEFINITIONS

AWV	Alaskan Way Viaduct
BMP	Best Management Practice
BNSF	BNSF Railway
BSP	braced soldier pile
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
City	City of Seattle
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DCLU	Seattle Department of Design, Construction and Land Use (now Department of Planning and Development)
DNR	Washington State Department of Natural Resources
DPD	Department of Planning and Development
EBSP	Elliott Bay Seawall Project
ECA	Environmentally Critical Areas
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
GMA	Growth Management Act
LPS	light-penetrating surface
NAVD88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
Pub. L.	Public Law
RCW	Revised Code of Washington
SDOT	Seattle Department of Transportation
SEPA	Washington State Environmental Policy Act
SMC	Seattle Municipal Code
UGA	Urban Growth Area
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
WSDOT	Washington State Department of Transportation

This page intentionally left blank.

EXECUTIVE SUMMARY

This Discipline Report analyzes impacts of the Elliott Bay Seawall Project (EBSP) on land use, shorelines, and parks and recreational facilities. The project's consistency with adopted land use and shoreline plans and policies at the federal, state, regional and local level are also examined. Parks and recreational facilities that are open to the public, whether on public or private land, are considered in this report.

The study area for this report is generally focused between S. Washington Street on the south, Broad Street on the north, First Avenue on the east and the waters of Elliott Bay on the west. When looking specifically at land use, neighborhood planning areas and census tracts are also examined, extending the study area to the north, south and east.

Three build alternatives (with several options) and a No Action alternative (with several scenarios) are analyzed and described in Chapter 1. Alternative A keeps the seawall as close to the existing alignment as possible, coupled with habitat improvements along Elliott Bay. Alternative B moves the seawall structure landward, creating additional habitat opportunities in several locations, as well as providing for potential new short-stay boat moorage at Washington Street Boat Landing, new viewpoints along the waterfront and extensive water or land improvements in the vicinity of the Seattle Aquarium. Alternative C is a true hybrid alternative, representing features from both Alternatives A and B (see Table 1-1).

CONSISTENCY WITH PLANS AND POLICIES

An analysis of federal, state and local plans shows that the EBSP is generally consistent with land use and shoreline plans and policies. Due to in-water work associated with removal of the existing seawall and the placement of various habitat improvements, Section 404 and Section 401 compliance would be required under the Clean Water Act (CWA) before fill material could be placed in Elliott Bay. Compliance with Section 10 of the Rivers and Harbors Act would be required for work in navigable waters. Additional permits would be required for in-water work (e.g., Hydraulic Project Approval). Approval from Washington State Department of Natural Resources (DNR) would likely be required for some of the habitat improvements proposed under any build alternative since the improvements would generally be on DNR land.

Regional and local growth plans, including the Puget Sound Regional Council's Vision 2040 and Transportation 2040, and the Seattle Comprehensive Plan are supportive of investments in existing infrastructure and protection of the transportation system against disaster. Neighborhood plans, including the Pioneer Square, Commercial Core and Belltown plans, encourage linkages among neighborhoods, preservation of essential infrastructure and development along the waterfront and adjacent areas.

Habitat improvements are also consistent with regional and local plans. The City's Shoreline Master Program, which implements the State Shoreline Management Act, stresses the protection of the shoreline; provision of an optimal amount of public access to the shorelines; encouragement of economic activity of water-dependent uses; and preservation, protection and restoration of areas that

support wild and aquatic life. All three build alternatives support these intentions, with Alternatives B and C potentially providing more habitat improvement, as well as more public access to the shorelines.

LAND USE AND SHORELINE IMPACTS

Nearly all adverse impacts of the project on land use and shorelines would occur during construction of the project. Construction of the seawall, habitat improvements and restored roadway would occur in stages over a number of years. The current project schedule assumes that no work would occur during the peak summer months (Memorial Day weekend through Labor Day weekend) to minimize impacts on retail businesses. The currently designated in-water work window is from August 15 to February 15, but the allowable work windows would be reconfirmed during the permitting process. During construction of the Central Seawall (S. Washington to Virginia Streets), a vehicular detour would be provided east of the existing surface street, with three lanes under the existing viaduct and a fourth lane just west of the viaduct structure. During this period, parking would be removed under the viaduct. Pedestrian access to the waterfront piers and Waterfront Park would be provided to the maximum extent possible. When construction work is occurring immediately adjacent to a specific pier, there may be temporary access restrictions. Such restrictions would be in compliance with applicable fire codes dealing with emergency access and egress. Should such access not be possible for short periods of time, access to some or all businesses on a specific pier may be temporarily prohibited. Increases in noise and dust due to construction activities would occur.

The major difference between alternatives is the construction method assumed for each and the resultant length of the construction period. For Alternatives A and C, a soil improvement method is assumed, with an overall construction duration for the Central Seawall of three construction seasons. For the North Seawall, overall construction duration for Alternatives A and C is four construction seasons. For Alternative B, a braced soldier pile (BSP) construction method is assumed. With this method, the Central Seawall has an overall construction duration of five construction seasons. The North Seawall has an overall construction duration of four construction seasons. Either construction method can be employed with any build alternative, with some variation in overall and actual construction duration. While Alternative C has many of the habitat and public access features of Alternative B, the construction method and construction duration are similar to those of Alternative A.

Though there would be adverse impacts during construction (noise, traffic and access, loss of parking, dust), these impacts would be temporary in nature and are unlikely to affect long-term land use decisions or result in any changes to zoning or other land use regulations. A number of mitigation measures are proposed to address adverse impacts on adjacent land uses during project construction. These measures can be found in the following discipline reports: Air Quality, Economics, Noise and Vibration, Public Services and Utilities, and Transportation (SDOT 2012a, 2012b, 2012c, 2012d, and 2012e, respectively). No additional mitigation specific to land use is proposed. Mitigation measures to address impacts to natural resources and habitat related to the shoreline can be found in the following discipline reports: Contaminated Materials; Fish, Wildlife and Vegetation; and Water Resources (SDOT 2012f, 2012g, and 2012h, respectively). No additional mitigation specific to shorelines is proposed since all alternatives would comply with the Shoreline Management Act and result in no net loss of ecological function.

Once the project is completed, the only operational effect in land use and shoreline results from the change in location of the seawall. This, in turn, changes the extent of the 200-foot shoreline zone, especially under Alternative B in the vicinity of Waterfront Park and the Seattle Aquarium where the seawall could be setback up to 75 feet.

PARKS AND RECREATION IMPACTS

Construction

A greater seawall pullback and the use of a different construction method proposed for Alternative B is anticipated to result in a longer overall construction period, particularly affecting historic piers, Waterfront Park and the Seattle Aquarium. The construction in these areas is expected to take two construction seasons, versus one in Alternatives A and C. For all build alternatives during construction of the Central Seawall, a vehicular detour would be provided east of the existing surface street, with three lanes under the existing viaduct and a fourth lane just west of the viaduct structure. During this period, parking would be removed from under the viaduct. This loss of parking would reduce the supply of available parking that serves the various parks and recreational venues.

The waterfront bicycle and pedestrian path (Elliott Bay Trail) would continue to operate through the construction period in its existing location from S. Washington Street to Pike Street, providing recreational opportunities for walkers and bicyclists, in addition to its primary transportation role. At Pike Street, the path would cross to the east side of the temporary roadway at a signalized intersection and transition to the existing path in the vicinity of the Waterfront Landings condominium. Pedestrian access to Waterfront Park, the Seattle Aquarium and Pier 62/63 would be provided to the maximum extent possible. When construction work is occurring immediately adjacent to a specific pier, there may be temporary-access reroutings and restrictions. If access is not possible for short periods of time, access to specific recreational amenities may be temporarily suspended. Public art adjacent to construction areas would be protected in place or temporarily removed and stored to reduce the likelihood of damage.

Increases in noise, vibration and dust due to construction activities would occur and could distract somewhat from the participant experience. The general disruption caused by construction of the project, changes in traffic patterns and loss of parking could, on a temporary basis, reduce the attractiveness of the waterfront to residents and visitors. Given the longer construction period, the overall period in which employees, visitors and residences would experience these effects would be greater for Alternative B than for Alternatives A and C by up to two years.

Regular boat services from Pier 55 to Blake Island State Park, as well as Argosy Harbor cruises would continue to be accessible during construction. Access to portions of the overwater plaza between Piers 55 and 56 that connects to the Argosy boat docks may be closed for short periods, but access would be available at all times to the docks.

Public access to the Seattle Aquarium would remain available throughout construction. When work is occurring in the immediate vicinity of the main entrance, visitors may have to access the Seattle Aquarium through an alternate route, such as through Waterfront Park, for a short duration. The

temporary loss of parking and more distant bus loading/unloading may dissuade some patrons and school groups from visiting the Seattle Aquarium during the construction period. Construction activities in the vicinity of the Seattle Aquarium are also likely to have a negative impact on Seattle Aquarium revenue during the construction period. The complexity of construction of Alternative B in this area would have a greater effect on Seattle Aquarium access than under Alternatives A and C.

Operational

Upon completion of the EBSP, access to parks and recreational facilities along the waterfront would be similar to what it is today. Riparian plantings along the seawall edge would add some visual interest along the waterfront as pedestrians approach parks, recreational facilities, ferry terminals, and existing viewpoints on the piers. Under all three build alternatives, the multipurpose pathway would be extended two blocks from Clay Street to Broad Street. The first block, from Clay Street to Vine Street would be on the east side of Alaskan Way. At Vine Street the path would cross to the west side of Alaskan Way where it would continue to Broad Street and connect to the Elliott Bay Trail through Olympic Sculpture Park and Myrtle Edwards Park.

Under Alternative A, parking would be similar to what is available today. Bus loading zones would be provided as they are today, providing access to the Seattle Aquarium and various parks and recreation spaces. The sidewalk on the west side of Alaskan Way would generally be in the same location as today and of similar width. Access to parks and recreational spaces would continue, as would the potential to enjoy activities such as walking and viewing. Open water views to the west would be similar to existing conditions.

Under Alternatives B and C, new viewpoints between Piers 48 and 50, 54 and 55, 56 and 57, 60 and 62/63, overlooking the Bell Harbor Marina, between 66 and 67, 67 and 69, and 69 and 70 would provide a more conducive location for viewing the open water of Elliott Bay and the landforms on the west side of Puget Sound. The sidewalk on the west side of Alaskan Way would generally be in the same location and of similar width as today except in Zone 4 (Seattle Aquarium and Park Zone) under Alternative B where the main sidewalk would be located east of its current location and along the eastern edge of the “Water Plaza” (Option 1) or “Land Plaza” (Option 2). Walkways linking the main sidewalk to the Seattle Aquarium and alongside the Seattle Aquarium would be provided as well ,providing overall pedestrian accessibility similar to today. A continuous walkway on the west side would be provided under Option 2. Access to parks and recreational spaces would continue, as would the potential to enjoy activities such as walking and viewing. Under Alternative C, the sidewalk in Zone 4 would not be cantilevered, creating open water space between the sidewalk and both Waterfront Park and the Seattle Aquarium. Access to those facilities would continue to be provided at designated locations.

The Washington Street Public Boat Landing pergola would be restored as part of any of the build alternatives. Alternative B would include moving the pergola up to 15 feet waterward to improve connections to the water and the potential addition of short-stay boat moorage connected to the boat landing via a new gangway. Alternatives B and C include informal public access for viewing a new intertidal habitat bench and backshore in Zone 1.

CHAPTER 1. PROJECT DESCRIPTION

1.1 PROJECT BACKGROUND

The City of Seattle Department of Transportation (SDOT) is proposing to construct the Elliott Bay Seawall Project (EBSP), which will replace the existing seawall along the shoreline of downtown Seattle. Extending from S. Washington Street to Broad Street, the seawall supports and protects the adjacent upland areas, which contain residences, commercial businesses and restaurants, parks and public facilities, transportation infrastructure (including sidewalks, streets, and a rail line), and a large number of utilities (Figure 1-1). The harbor area in Elliott Bay is used by ferries, cruise ships, and commercial vessels, as well as for recreation. Overall, the waterfront is an important center of commerce and recreation for the entire city and region.



Figure 1-1. Elliott Bay Seawall Project Area

The existing seawall includes three types of structures, all constructed between 1911 and 1936 and ranging in size from approximately 15 to 60 feet wide. Over time, these structures have deteriorated as a result of various natural and physical processes. The seawall's poor condition makes it vulnerable to significant damage during a major storm or seismic event. Therefore, the EBSP is a critical public safety project. The completed seawall will provide protection from coastal storm damages, seismic damages, and shoreline erosion, and will thereby contribute to the preservation of Seattle's downtown, the local economy, and the region's economic competitiveness and quality of life. Seawall replacement will also provide the foundation and structural support for the downtown Seattle waterfront, including improvements planned as part of Waterfront Seattle.

The project's purpose is to reduce the risks of coastal storm and seismic damages and to protect public safety, critical infrastructure, and associated economic activities along Seattle's central waterfront. Additionally, the project will improve the degraded ecosystem functions and processes of the Elliott Bay nearshore in the vicinity of the existing seawall.

Construction of a new seawall would have both beneficial and adverse effects on environmental resources. This discipline report will examine the effects of the project on land use, shorelines, and parks and recreational facilities as part of the project's overall environmental documentation.

1.2 PROJECT AREA LIMITS AND ZONES

The project area for the EBSP extends from S. Washington Street to Broad Street, from the eastern edge of pavement below State Route (SR) 99 to the waters of Elliott Bay. The project has been divided into six zones. Zones 1 through 4 constitute the Central Seawall Study Area. The two remaining zones, Zones 5 and 6, make up the North Seawall Study Area. A delineation of the zones is provided in Figure 1-2 and concept plans are included at the end of this chapter.



Figure 1-2. Elliott Bay Seawall Zone Designations

Central Seawall Study Area (S. Washington Street to Virginia Street):

- Zone 1, the Pioneer Square/Washington Street Boat Landing Zone, runs from S. Washington Street to Yesler Way.
- Zone 2, the Ferry Terminal Zone, stretches from Yesler Way to Madison Street, and includes the Colman Dock ferry terminal and Fire Station No. 5.
- Zone 3, the Central Pier Zone, includes the historic waterfront piers (Piers 54 to 57) and runs from Madison Street to just north of University Street.
- Zone 4, the Park/Aquarium Zone, includes Waterfront Park, the Seattle Aquarium, and Piers 62/63. This zone runs from north of University Street to approximately Virginia Street.

North Seawall Study Area (Virginia Street to Broad Street):

- Zone 5, the Bell Harbor Zone, runs from Virginia Street to Battery Street. This zone includes the Bell Harbor Conference Center, Cruise Ship Terminal, and Marina.
- Zone 6, the North Pier Zone, stretches from Battery Street to Broad Street, and includes the Edgewater Hotel, Port of Seattle Offices, and Pier 70.

1.3 PROJECT ALTERNATIVES

The EBSP Environmental Impact Statement (EIS) evaluates a No Action Alternative and three build alternatives for the project. As required by the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA), the build alternatives represent different ways of accomplishing the project purpose. Evaluating alternatives allows SDOT decision-makers, with input from the public, agencies, and tribes, to consider environmental impacts in conjunction with other decision factors such as cost, schedule, and feasibility.

The build alternatives for the EBSP are:

- **Alternative A**, which would reconstruct the seawall as close to its existing alignment as possible. Jet grouting, a subsurface soil improvement, would be used to form the seawall's structural support. Habitat improvements would include the addition of shoreline enhancements, installation of a continuous habitat bench, and intermittent light-penetrating surfaces (LPS) at piers.
- **Alternative B**, which would move the seawall up to 75 feet landward of its current location. Braced soldier piles (BSP) would be used to build an underground wall structure. Moving the seawall inland would allow the construction of expanded habitat enhancements and mostly continuous LPS, in addition to the habitat improvements and continuous habitat bench described for Alternative A.
- **Alternative C**, which would move the seawall up to 15 feet landward of its current location. This alternative would use subsurface soil improvements (likely including both jet grouting and deep soil mixing) to provide structural support. Alternative C would provide a continuous habitat bench and continuous LPS, in addition to shoreline enhancements similar to Alternative B.

These three build alternatives encompass a range of design ideas to establish “bookends” for the project, thus capturing a suite of potential options, impacts, and effects. Features of the alternatives could be blended in future design phases to reflect public, agency, and stakeholder input.

The following section (Section 1.4) describes the No Action Alternative. Section 1.5 discusses the features that are common to the three build alternatives and Section 1.6 provides an overview of project construction. Section 1.7 provides additional detail on specific features that differ among the build alternatives.

1.4 NO ACTION ALTERNATIVE

NEPA, SEPA, and the City of Seattle's (City's) implementing regulations (Seattle Municipal Code [SMC] 25.05) require that a No Action Alternative is evaluated in addition to the build alternatives in the EIS. The No Action Alternative provides a baseline against which the potential effects of the build alternatives can be compared.

The No Action Alternative is projected over the next 50 years. Given the age and condition of the seawall, continued deterioration and some level of failure will likely occur within the 50-year timeframe. Because the existing seawall is vulnerable to various types of damage, the No Action Alternative must

anticipate the possibility of degrees of seawall failure. Therefore, three No Action scenarios have been evaluated:

1. **Minimal Damage:** This scenario would not require a significant repair of the seawall, and any needed repairs could be undertaken by the City. Small failures caused by tidal erosion (as are currently happening today) or minor seismic events would result in settlement of the wall or collapse of the roadway or sidewalk on Alaskan Way. This scenario assumes continued operation of the seawall with ongoing maintenance as needed.
2. **Loss of Functionality:** This scenario would result from sustained damage, and the seawall would no longer be considered safe for public access and could no longer perform the majority of its essential functions. As with the Minimal Damage scenario, this scenario could result from either tidal or seismic events.
3. **Collapse of the Seawall:** This scenario would occur only as a result of seismic damage; however, collapse resulting from a seismic event could trigger additional damage from tidal erosion. Seawall failure would have significant impacts on the public, Seattle, the Puget Sound region, Washington State, and the nation. Loss of the seawall's function would disrupt or destroy the critical transportation infrastructure that runs along the Seattle waterfront, potentially displacing hundreds of thousands of vehicles on roadways, 30,000 daily ferry passengers who use Colman Dock ferry terminal, and 24 freight trains and six passenger trains that run near the waterfront. It would also jeopardize critical utility corridors that serve downtown Seattle and the region, and would impair the viability of the waterfront as a major tourist destination and regional economic engine.

Conditions without the project were defined as part of a separate Elliott Bay Seawall Feasibility Study, conducted by the United States Army Corps of Engineers (USACE). The "without project" conditions serve a similar purpose in the feasibility study as does the No Action Alternative under SEPA. The without project conditions are summarized below to provide additional detail about the No Action scenarios.

- The City would continue to repair minimal damage failures unless three or more sections of the seawall fail in a single year, at which point the seawall is assumed to have lost its functionality.
- The City would stabilize the shoreline following seawall collapse to minimize erosion impacts. This stabilization would help to prevent the permanent loss of landward structures, utilities, and the Burlington Northern Santa Fe (BNSF) rail line to erosion.
- If functionality of the seawall were lost, the City would construct a trestle bridge to maintain access to Colman Dock Ferry Terminal and Fire Station No. 5.
- If functionality of the seawall were lost, the City would repair or relocate affected utilities.

1.5 DESIGN FEATURES COMMON TO THE BUILD ALTERNATIVES

If implemented, the EBSP would replace the failing seawall that runs along Elliott Bay and underneath Alaskan Way and would restore and enhance aquatic habitat along the seawall's new face. A new

seawall would reduce the risk of seismic damage and protect Seattle's downtown waterfront from wind-driven storm waves and erosive tidal forces; safeguard major public and private utilities, including power for downtown Seattle and the region, natural gas, and telecommunications; support SR 99, Colman Dock ferry terminal, and rail lines; and enhance habitat for juvenile salmon and other marine life. Additionally, the project would be compatible with future improvements currently being planned at and near the waterfront.

All build alternatives encompass three major categories of design features: the new seawall itself, improvements to aquatic habitat, and improvements to upland areas. Each of these categories is described briefly below.

1.5.1 Seawall

The primary function of the new seawall is to provide protection from storm and wave erosion, impacts from floating objects, and resistance from lateral pressures such as those caused by an earthquake. A new seawall face would generally be placed either close to or somewhat landward of its current position. Depending on the build alternative selected, the final location of the seawall face would vary from approximately 3 feet waterward to 75 feet landward of the existing alignment. It would be most efficient to leave the existing seawall in place during construction of the new seawall and to build the new structure either behind or in front of the existing face.

The new seawall would also reduce the risks related to seismic activity. How these risks are reduced would differ between the alternatives. Soil improvement in the form of jet grouting with or without deep soil mixing (Alternatives A and C) would minimize the risk of liquefaction by physically stabilizing liquefiable soils behind the seawall, while the BSP method (Alternative B) would not prevent liquefaction but rather would resist the lateral spreading and migration of soil that results from liquefaction. Both methods would stabilize the seawall during seismic events. The design life of the new seawall is 75 years.

1.5.2 Habitat Improvements

Rebuilding the seawall would provide the opportunity to improve adjacent aquatic habitat. Habitat improvement measures would be implemented as part of each build alternative. These measures would be designed to restore a functional intertidal migration corridor along the seawall for juvenile salmonids, and would also improve ecosystem productivity to enhance the marine nearshore food web. Figure 1-3 shows a conceptual rendering of the proposed habitat improvements.

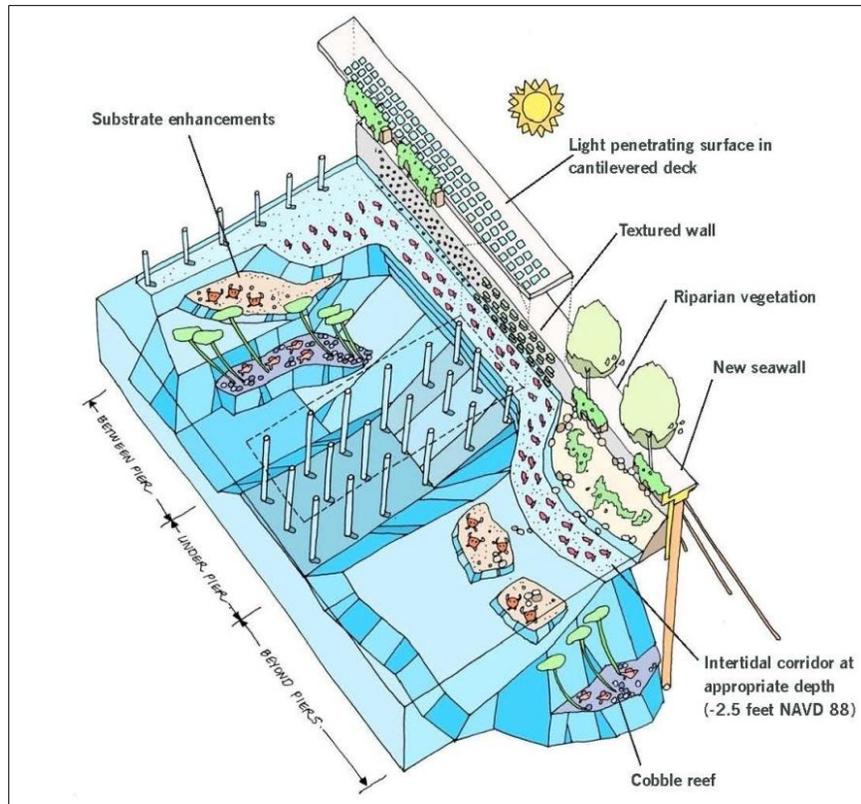


Figure 1-3. Conceptual Rendering of Proposed Habitat Improvements

The intertidal migration corridor for juvenile salmonids would be improved by:

- Modifying substrate depths to create a habitat bench and achieve appropriate intertidal and shallow-water habitat elevations;
- Improving the diversity of off-shore substrate by supplementing it with coarse substrate;
- Increasing textures on the seawall face to encourage the development of marine nearshore habitat and attachment of aquatic organisms;
- Adding riparian plants along the wall and sidewalk to provide food (insects and detritus) for migrating salmon; and
- Increasing daylight illumination of the habitat bench and other nearshore habitat by including LPS in a cantilevered or pile-supported sidewalk.

Enhanced ecosystem productivity would generally be accomplished by:

- Enhancing substrate by supplementing it with cobble, pea gravel, and shell hash; and
- Constructing the textured wall face, riparian plantings, LPS, and suitable bench substrate.

1.5.3 Upland Improvements

In addition to replacing the seawall and restoring aquatic habitat, the three build alternatives would provide a number of upland improvements. The existing Alaskan Way roadway, multi-use trail, and parking would be restored to their original function and capacity after construction. The restored

sidewalk along the waterfront would range from 15 to 30 feet in width and include a cantilevered portion with LPS that would benefit the marine habitat below. Viewing areas would be provided waterward of the sidewalk and would offer opportunities for public gathering space. New railings, formal and informal seating, bicycle racks, wayfinding elements, and other design amenities would also be included as project improvements. All build alternatives would restore the historic Washington Street Boat Landing, either maintaining its current location or moving it 15 feet waterward.

Currently, there are no water quality facilities for treating surface water runoff from Alaskan Way. Stormwater drainage pipes in the project area would be reconstructed and stormwater quality would be improved through the installation of treatment to meet code by removing the bulk of suspended solids, oils, and greases. These actions would improve water quality in the nearshore of the project area. It would be expected that new stormwater structures would initially require less maintenance than those currently in place and, as a result, have fewer detrimental impacts on the environment. As the project design moves forward, other stormwater management strategies could be identified that provide greater environmental benefit without increasing environmental impacts.

1.6 PROJECT CONSTRUCTION

1.6.1 Construction Schedule

Central Seawall construction is expected to begin in fall of 2013 and would progress from north to south, beginning in Zone 4 and ending in Zone 1. Based on current schedules, Central Seawall construction would last three to five construction seasons depending on the alternative, with construction seasons extending from approximately Labor Day to Memorial Day to avoid major disruption during the peak tourist season. The North Seawall would be built as a separate construction phase and would require an additional four construction seasons.

1.6.2 Temporary Roadway and Construction Work Zone

To accommodate construction activities during replacement of the seawall, the existing Alaskan Way roadway would be relocated beneath the Alaskan Way Viaduct. Three lanes of traffic would be maintained underneath the viaduct throughout construction. The resulting space along the waterfront would be used as a work zone during construction of the Central Seawall (Figure 1-4). During North Seawall construction, this dedicated construction work zone would not be available, and the temporary roadway would be accommodated in the available right-of-way.

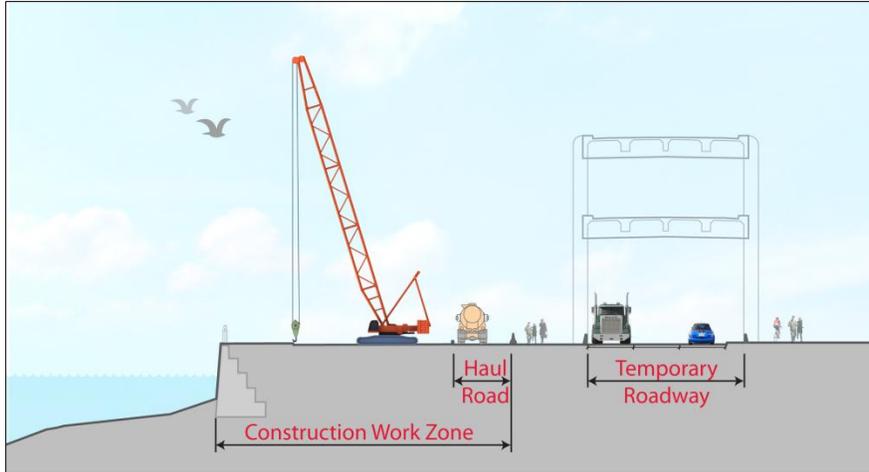


Figure 1-4. Construction Work Zone and Temporary Roadway

The construction work zone would extend from the western edge of the existing multi-use path on Alaskan Way to the water. Existing street trees would be removed to provide additional space within this area and would either be replaced as riparian plantings with the EBSP or replaced during future waterfront improvement projects. The existing streetcar tracks that run along Alaskan Way would also be removed during construction.

Construction would be staged from several locations within the work zone. Staging areas would vary in size and would be used for delivery and storage of construction materials and equipment. The staging areas would be sited to avoid disrupting access to piers, residences, and businesses along the waterfront. In addition to the upland staging areas, construction activities may also be staged from barges and tugs in Elliott Bay.

During Central Seawall construction, some temporary parking spaces could be provided as part of each construction stage. During the first stage of construction, parking could be provided on the existing Alaskan Way roadway south of the active work zone. During the later stages when construction has progressed to the southern portion of the project area, parking could be provided on the restored roadway to the north of active construction. During North Seawall construction, a similar program of temporary parking would be implemented, to the extent possible.

To the greatest extent possible, construction materials and personnel would be transported to the construction work zone and staging areas via freeways and arterials. However, other city streets could provide access to the site when needed. The eastern border of the construction work zone along Alaskan Way would serve as a haul road to channel truck traffic within the project area.

The existing multi-use trail would be maintained (with the potential for temporary detours), and access to the piers would be maintained throughout construction.

1.6.3 Construction Methods

The seawall would be replaced using soil improvement, BSP, or a combination of these two methods. A brief description of each method is provided below.

1.6.3.1 Soil Improvement

Soil improvement is a general term for a variety of techniques that are used to stabilize existing soils by improving their internal structure and strength. Two techniques that are being considered for the EBSP are jet grouting and deep soil mixing. Jet grouting consists of adding grout to existing soils to form a “block” of improved soil mass that extends down to the competent foundation below. This technique has been identified as a feasible way to strengthen the material underlying the project area, which includes an existing timber relieving platform, buried timber piles, utilities, and other potential obstructions.

Jet grouting creates circular columns of soil cement by means of a hollow drill pipe measuring a few inches in diameter that is inserted into the soil. Grout is then sprayed into the surrounding soil under high pressure through horizontal nozzles in the rotating drill pipe. This process cuts the existing soil and mixes the soil with the grout. The strength of the soil would be substantially improved through this process, thus greatly reducing the soil’s potential for liquefaction during an earthquake.

The grout columns would be constructed in a grid pattern to create a block of improved soil. The grid pattern would be installed between the timber piles of the existing seawall to eliminate the need to remove the existing piles. The finished arrangement of the grouted columns would create a “spine” for the new seawall. The grouting process generates spoils that would be disposed of using appropriate means, in accordance with applicable regulations.

Deep soil mixing, another technique that could be used for soil improvement, uses an auger that penetrates the ground surface to mix and consolidate the underlying soils to a depth of up to 20 feet. With deep soil mixing, no grout is applied under pressure and there are minimal spoils for disposal.

1.6.3.2 Braced Soldier Piles

BSP is an alternative structural stabilization method. This method would involve drilling large holes (approximately 8 feet in diameter) to a depth of approximately 75 feet below the present street level of Alaskan Way where the firm layer of glacial till is located. An oscillator, a specialized piece of drilling equipment, would install a steel casing as the drilling progresses to prevent the holes from collapsing and to contain the soils to be excavated. The leading edge of the casing would be equipped with cutting teeth to carve through the timber boards and piles of the existing relieving platform and into the soils below.

Once the holes have been drilled and excavated to the final depth, a steel reinforcing cage would be placed into the shaft casing and the casing would be filled with concrete. The casing would be extracted as the concrete is poured and would leave behind a reinforced concrete cylinder, or soldier pile. A line of these soldier piles would be constructed to form the spine of the seawall. Soil anchors would then be installed to brace or tie back these soldier piles.

1.6.4 Soil Dewatering and Spoils Disposal

Regardless of the construction method that is selected, excavations into soils in the construction zone would need to be dewatered, which generally involves disposing of the wastewater offsite or pumping

the excess water to a location where it can be settled and/or before discharge. Wet spoils from jet grouting or other soil improvement activities must be managed or disposed of as well. SDOT is currently exploring various methods for managing and disposing wastewater and jet grout spoils, which would be detailed in the project's dewatering and erosion control submittals required as part of the Clean Water Act Section 401 and National Pollutant Discharge Elimination System (NPDES) construction general stormwater permit processes, as well as by the City's standard construction specifications.

1.6.5 Utility Protection and/or Relocation

The project area contains a large number of utilities, including water, sanitary sewer, combined sewer, stormwater, electrical transmission and distribution, steam, gas, fire alarm, and numerous telecommunication systems. These utilities range from major transmission lines serving portions of Seattle and the region to individual connections serving adjacent properties. As shown in Figure 1-5, some of these utilities are directly beneath the Alaskan Way roadway and sidewalk and above the relieving platform of the existing seawall, while others extend through the seawall to the piers.

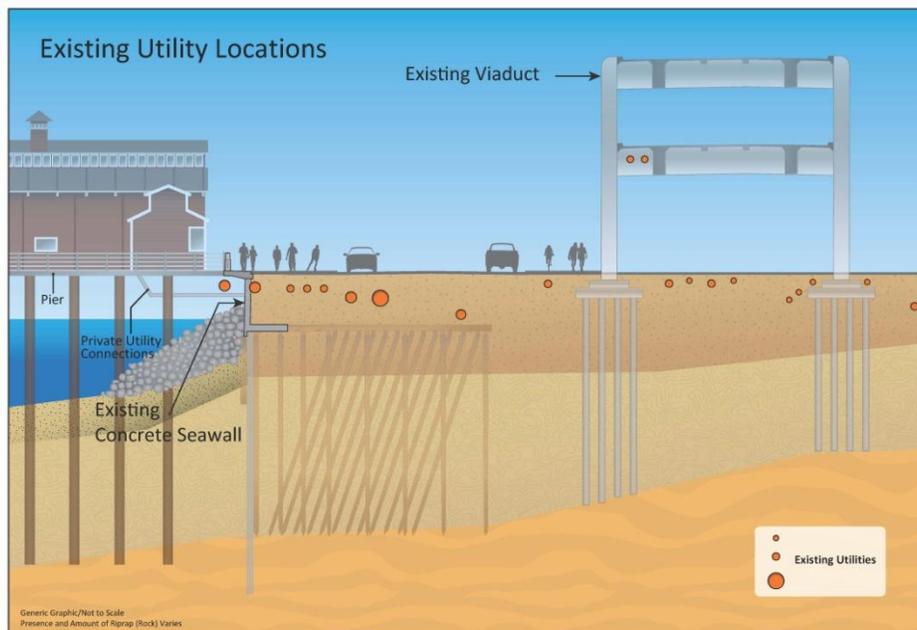


Figure 1-5. Representative Cross Section Showing Typical Existing Utility Locations within Project Limits

SDOT's objective will be to maintain utility service to the greatest extent possible during construction, although the means and methods for doing so would vary depending on the construction method used. Alternatives A and B assume that all soil overlying the relieving platform would need to be excavated. Excavation would require temporary or permanent relocation of the majority of existing utilities. Alternative C assumes that most soil improvement could be accomplished through small penetrations at street level, which would allow the majority of the utility lines above the relieving platform to remain in place during that construction activity. With either method, most individual service lines would be temporarily relocated and reinstalled in their final locations as seawall construction progresses. Final points of service to the waterfront piers would remain the same to alleviate the need to update the

facilities to the current Uniform Building Code. The final construction method chosen will not preclude the ability of utilities to provide future new services to the downtown waterfront area.

1.7 BUILD ALTERNATIVES

The preceding sections provided information on project elements that would be similar among the three build alternatives. The following discussion focuses on the primary differences among Alternatives A, B, and C in terms of the seawall's location, the configuration of Alaskan Way, habitat improvements, public amenities, and construction sequence and schedule. Table 1-1 (at the end of this chapter) compares key features of the alternatives.

1.7.1 Alternative A

Alternative A would reconstruct the seawall as close to its existing alignment as possible, with jet grouting forming the structural support. Habitat improvements would include the addition of shoreline enhancements and the installation of a continuous habitat bench and LPS at piers. Figures 1-18 and 1-19 at the end of this chapter depict Alternative A.

1.7.1.1 Seawall

In Alternative A, the new seawall would be reconstructed as close to the alignment of the existing seawall as possible, with only a minimal setback (as outlined in the bulleted list below). This placement would allow construction to proceed without requiring the removal of the existing wall first.

The approximate proposed location of the seawall face for Alternative A relative to the existing seawall face would be:

- Zone 1 – in place (no change),
- Zone 2 – 15 feet landward,
- Zone 3 – 3 feet waterward, and
- Zones 4, 5, and 6 – 10 feet landward.

In Zone 1, the seawall would be reconstructed in its existing location to minimize potential conflicts with construction of the SR 99 bored tunnel, which is being built as part of a separate project. In Zones 2, 4, 5, and 6, the new wall would be constructed behind (east of) the existing wall, and then the existing seawall west of the new seawall face would be demolished. In Zone 3, the new seawall structure would be constructed to the west of the existing wall, resulting in the new seawall face being set three feet waterward of its current location.

1.7.1.2 Roadway

The existing Alaskan Way is generally four lanes (two lanes in each direction), except in the vicinity of Colman Dock (Yesler Way to Spring Street), where it consists of one northbound lane and two southbound lanes. Alternative A would add a permanent northbound lane between S. Washington and

Madison Streets¹ to handle traffic in this segment headed to Colman Dock and through to other destinations. A temporary second northbound lane (constructed by the Washington State Department of Transportation [WSDOT]) is currently in place. Parking and loading zones in the finished configuration would be similar to today.

A sidewalk of approximately the same width as the existing sidewalk (15 to 20 feet) would be provided on the west side of the street. The sidewalk would be cantilevered or pile supported in Zones 2 through 6 and would extend back to the piers in all zones, with LPS provided where feasible. The mixed-use trail on the east side of Alaskan Way would be extended from its existing terminus north to Clay Street. At Clay Street, the trail would cross Alaskan Way and continue on the west side of Alaskan Way to Broad Street, where it would connect to the existing trail system that runs along Olympic Sculpture Park and Myrtle Edwards Park.

1.7.1.3 Habitat Improvements

Alternative A would provide an effective intertidal corridor along the seawall to support juvenile salmonid migration and would enhance ecosystem productivity. Habitat benches, a sidewalk with LPS, a textured wall face, subtidal substrate enhancements, cobble reefs, and riparian plants would be installed. No net loss of ecological function or intertidal elevation would occur.

1.7.1.4 Upland Improvements

Under Alternative A, public amenities would include the restored historic Washington Street Boat Landing, improved water-viewing opportunities at various locations, new or replaced railings, new sidewalks, waterfront planters, and street plantings. Reconstructed sidewalks would extend from the curb line of the restored Alaskan Way to the western edge of the existing sidewalk. These improvements would add variety to the waterfront by defining gathering spaces, viewing areas, and building entries.

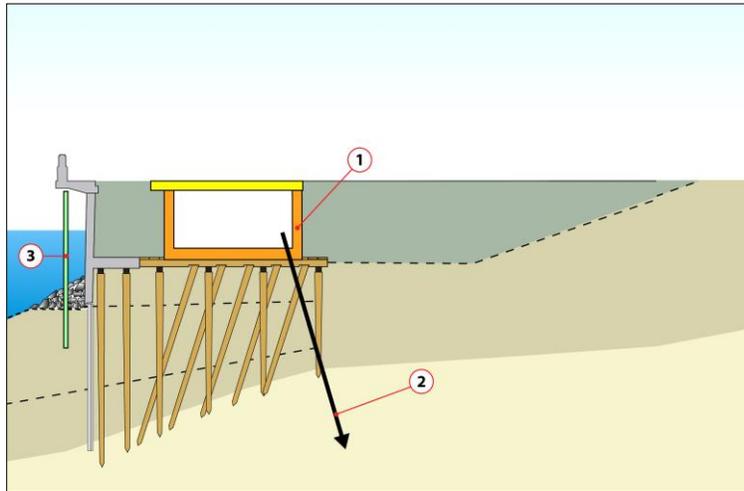
1.7.1.5 Construction and Schedule

Under Alternative A, the construction method proposed for the primary structural element of the seawall is soil improvement. With this method, construction of the Central Seawall would require approximately three construction seasons with two summer shutdown periods. Construction of the North Seawall would require an additional four construction seasons with three summer shutdown periods. The current plan for Alternative A is to begin construction of the Central Seawall in Zone 4, move southward to Zone 3, and then progress to Zones 2 and 1. The Central Seawall construction would be followed by the North Seawall construction in Zones 6 and 5.

The anticipated construction activities and probable sequence for Alternative A, using jet grouting for the soil improvement, are depicted in Figures 1-6 through 1-9. The figures describe four primary stages of work that would occur along the waterfront. The construction activities within each zone would vary

¹ The Elliott Bay Seawall Project would build the additional lane from S. Washington Street to Madison Street. The portion between S. King Street and S. Washington Street would be constructed as part of the Alaskan Way Viaduct Replacement Project.

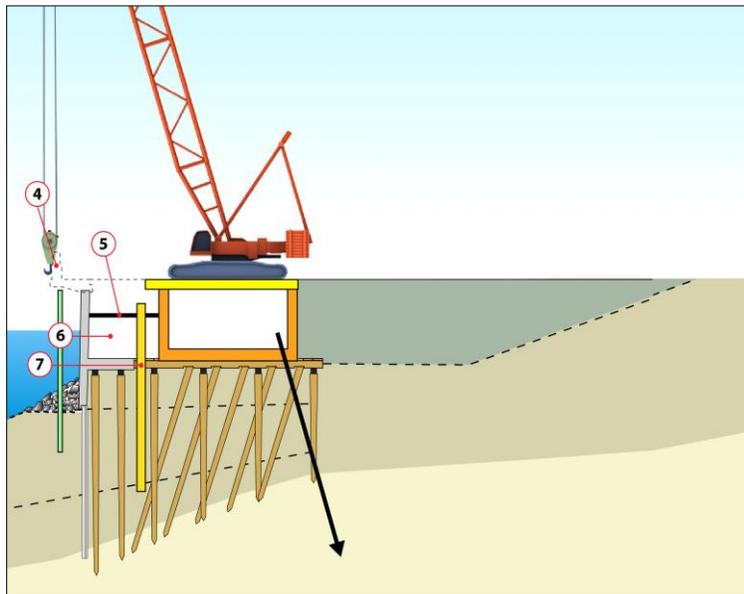
depending on the type of existing seawall. The figures depict the Type A seawall. (Type A seawall is a sheet-pile supported, reinforced, concrete face panel, which is tied back to a buried timber relieving platform supported by vertical and battered timber piles.) For Alternative A, it was assumed that the area above the existing relieving platform would be excavated before jet grouting begins.



Alternative A, Stage 1

1. Excavate to the top of relieving platform, relocate utilities, and install shoring
2. Install soil anchors
3. Remove existing riprap and install temporary containment wall

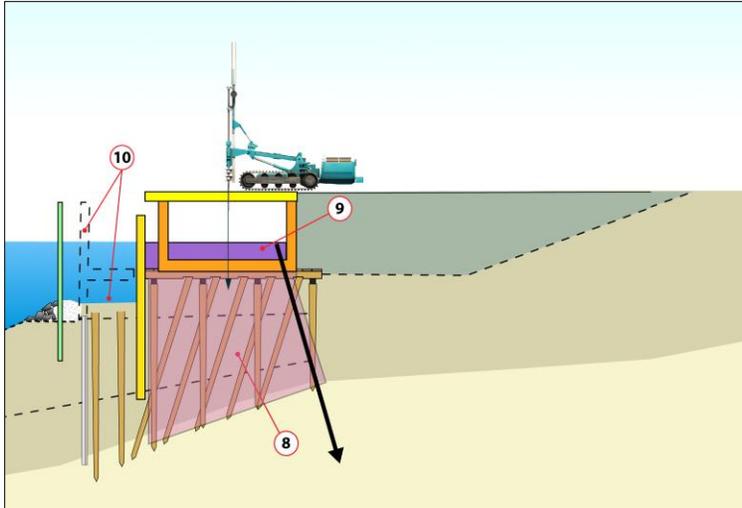
Figure 1-6. Alternative A, Stage 1



Alternative A, Stage 2

4. Remove existing cantilever sidewalk
5. Brace existing concrete face panel
6. Excavate remaining soil
7. Install concrete face panel

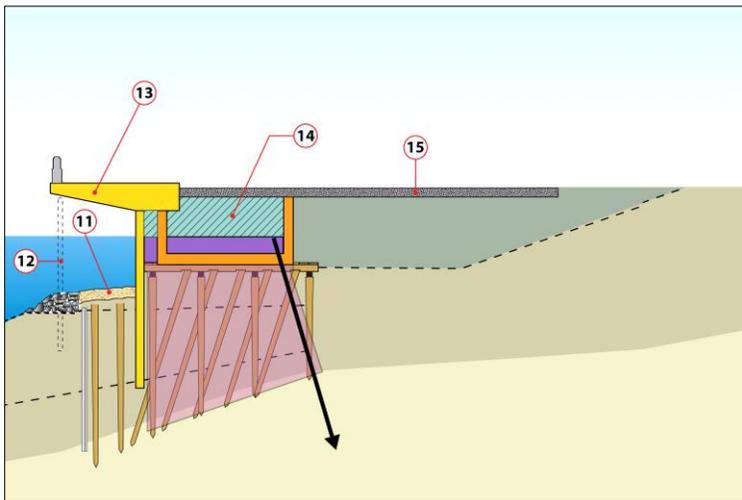
Figure 1-7. Alternative A, Stage 2



Alternative A, Stage 3

- 8. Install soil improvement (jet grouting)
- 9. Install anchor slab
- 10. Remove portion of existing wall

Figure 1-8. Alternative A, Stage 3



Alternative A, Stage 4

- 11. Place substrate
- 12. Remove temporary containment wall
- 13. Install sidewalk
- 14. Restore utilities and backfill
- 15. Complete restored roadway

Figure 1-9. Alternative A, Stage 4

1.7.2 Alternative B

Alternative B would move the seawall up to 75 feet landward of its current location, with BSP forming an underground wall structure to protect against coastal storm damage and seismic forces. In addition to the habitat improvements described for Alternative A, this alternative would construct a continuous habitat bench and continuous LPS at the piers. Figures 1-20, 1-21, and 1-22 at the end of this chapter depict Alternative B.

1.7.2.1 Seawall

Under Alternative B, the new seawall would be constructed up to 75 feet east of the existing seawall alignment and would provide a range of potential design opportunities. The approximate proposed location of the seawall face for Alternative B, relative to the existing seawall face, would be:

- Zone 1 – 0 to 15 feet landward,
- Zone 2 – 15 feet landward,
- Zone 3 – 30 feet landward,
- Zone 4 – 30 to 75 feet landward following the restored road curb alignment, and
- Zones 5 and 6 – 10 feet landward.

In Zones 1, 2, 5, and 6, the new wall would be constructed 10 to 15 feet east of the existing wall. In Zones 3 and 4, the new wall would be constructed 30 to 75 feet farther east, allowing greater flexibility for future habitat and public amenity spaces. This eastward realignment would largely reshape the downtown Seattle waterfront. After the new seawall was in place, the existing seawall would be demolished.

1.7.2.2 Roadway

Under Alternative B, the lane configuration of Alaskan Way would remain identical to the current configuration because of the confined space that would be available between the location of the seawall (eastward of the existing seawall) and the existing Alaskan Way Viaduct structure. A temporary northbound lane between Yesler Way and Spring Street has been installed by WSDOT, and it may be used during seawall construction.

Similar to the other build alternatives, the existing roadway, sidewalk, and multi-use trail would be restored to their original function and capacity after construction, with the multi-use trail connecting to the existing trail system that runs along Olympic Sculpture Park and Myrtle Edwards Park. However, due to space constraints, southbound parking and loading in Zone 3 may be restricted between University and Madison Streets.

1.7.2.3 Habitat Improvements

Alternative B would include the installation of habitat benches, a sidewalk with LPS, a textured wall face, subtidal substrate enhancements, cobble reefs, and riparian plants. However, the intertidal habitat

would be larger because the seawall would be set back farther east (landward). Alternative B would provide substantial enhancements within the new aquatic land available in Zones 1, 3, and 4.

Zone 1 would include an intertidal habitat bench and backshore that would be bordered by riparian plants, rocks, and drift logs. In Zone 3, the 30-foot seawall setback would allow the installation of a confined-substrate habitat bench with LPS installed above. In Zone 4, the 75-foot seawall setback would allow expanded upland riparian planting or increased intertidal habitat.

1.7.2.4 Upland Improvements

Alternative B would improve water viewing at various locations and provide additional public gathering spaces, as well as interpretive, recreational, and cultural opportunities. The new sidewalks would be enhanced with LPS and reconfigured with planters and new or replaced railings along the length of the seawall. These additional and enhanced gathering and overlook spaces would be provided in Zones 1, 3, 4, 5, and 6.

In Zone 1, Washington Street Boat Landing would be restored and reinstalled within the Washington Street right-of-way, west of its current location to improve its connection to the water. A new gangway and short-stay boat moorage could be created to restore the landing's historic connection with Elliott Bay. North of the boat landing, steps and a boardwalk (Option 1) or boulders (Option 2) could be added for seating and for physical access to or viewing of the new intertidal habitat bench.

Zones 3, 5, and 6 would include viewpoints between the piers. These viewpoints would create opportunities for public gathering, seating, and water viewing. The viewpoints would be parallel with the adjacent piers, thereby directing the view out to Elliott Bay. The viewpoints would include seating steps and stairs to bring people closer to the water.

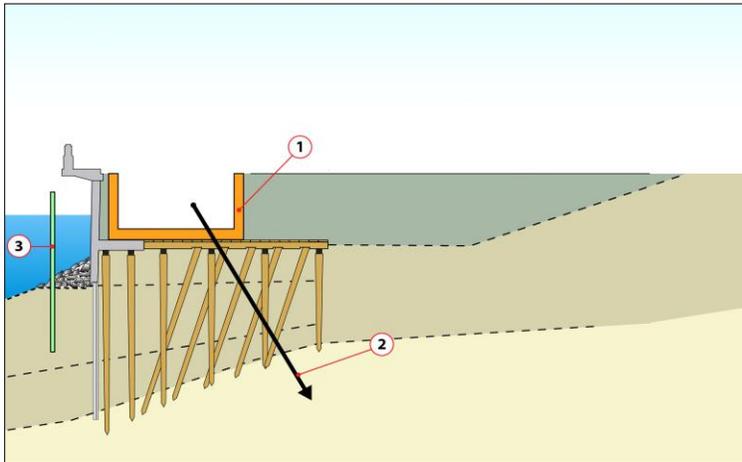
In Zone 4, the proposed seawall setback of 30 to 75 feet would provide two types of opportunities: a water plaza (Option 1) or a land plaza (Option 2). In Option 1, openings in the expansive plaza and walk would allow users to view tide pools and aquatic life below. In Option 2, raised planters would be filled with riparian plants, logs, and stones that would be reminiscent of Puget Sound shorelines.

1.7.2.5 Construction and Schedule

Under Alternative B, the design option proposed for the primary structural element of the seawall is BSP installed by means of a drilled-shaft construction method. With this method, construction of the Central Seawall would require approximately five construction seasons with four summer shutdown periods. Construction of the North Seawall would require an additional four construction seasons, similar to Alternatives A and C, although the duration may be slightly longer.

Access during construction would be more difficult than for either Alternatives A or C because the eastward setback of the seawall would restrict the construction staging areas to the project ends (i.e., north and south extents), instead of alongside the construction work zone. Under Alternative B, it would not be possible to maintain a continuous construction haul road because of the seawall setback in Zones 3 and 4. The construction of a land plaza or water plaza in Zone 4 would increase the duration of construction.

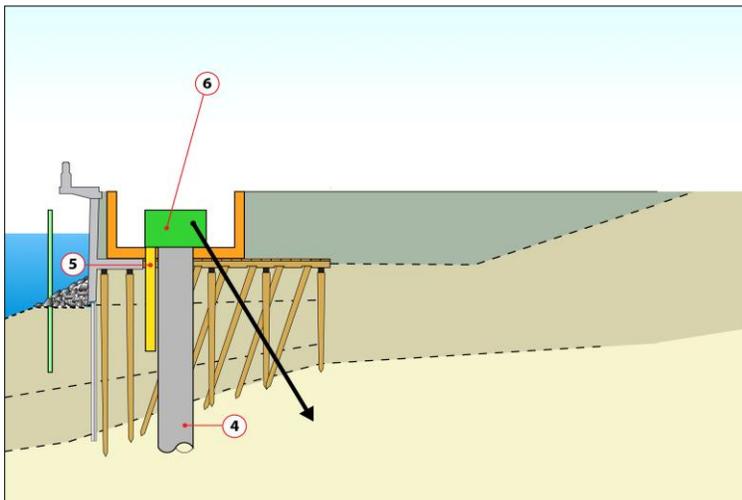
Construction of the Central Seawall would begin in Zone 4, move southward to Zone 3, and then progress to Zones 2 and 1. The Central Seawall construction would be followed by the North Seawall construction in Zones 6 and 5. The anticipated construction stages for Alternative B (assuming a Type A existing seawall) are shown in Figures 1-10 through 1-13.



Alternative B, Stage 1

1. Excavate to top of relieving platform, relocate utilities, and install shoring
2. Install soil anchors
3. Remove existing riprap and install temporary containment wall

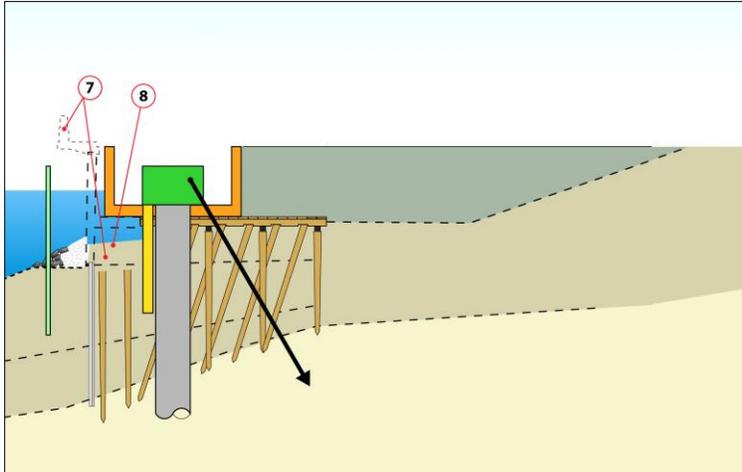
Figure 1-10. Alternative B, Stage 1



Alternative B, Stage 2

4. Drill shaft
5. Install concrete face panel
6. Cast concrete anchor cap

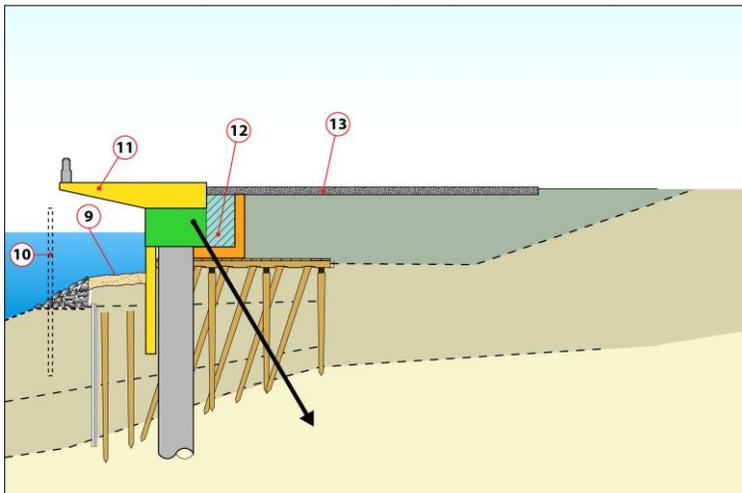
Figure 1-11. Alternative B, Stage 2



Alternative B, Stage 3

- 7. Remove existing cantilever sidewalk
- 8. Remove portion of existing wall

Figure 1-12. Alternative B, Stage 3



Alternative B, Stage 4

- 9. Place substrate
- 10. Remove temporary containment wall
- 11. Install sidewalk
- 12. Restore utilities and backfill
- 13. Complete restored roadway

Figure 1-13. Alternative B, Stage 4

1.7.3 Alternative C

Alternative C would move the seawall up to 15 feet landward of its current location and would use soil improvements (likely including both jet grouting and deep soil mixing) to provide structural support. Alternative C would also provide a continuous habitat bench and continuous LPS in addition to shoreline enhancements. Figures 1-23 and 1-24 at the end of this chapter depict Alternative C.

1.7.3.1 Seawall

Under Alternative C, the seawall would be constructed approximately 10 to 15 feet landward of the existing seawall alignment along its entire length. The setback proposed for Alternative C would allow soil improvements to proceed without first removing the existing seawall. The approximate proposed location of the seawall face for Alternative C relative to the existing seawall face would be:

- Zones 1 and 2 – 15 feet landward,
- Zone 3 – 10 to 15 feet landward, and
- Zones 4, 5, and 6 – 10 feet landward.

1.7.3.2 Roadway

The existing roadway is generally four lanes (two lanes in each direction), except in the vicinity of Colman Dock (Yesler Way to Spring Street), where it consists of one northbound lane and two southbound lanes. Alternative C would add a permanent northbound lane between S. Washington and Madison Streets² to support traffic bound for Colman Dock and other destinations. A temporary second northbound lane (constructed by WSDOT) is currently in place and could be used during seawall construction. Parking and loading zones would be similar to those present today.

A sidewalk of approximately the same width as the existing sidewalk (15 to 20 feet) would be provided on the west side of the street after construction. The sidewalk alignment would be cantilevered or pile supported and would extend back to the piers in all zones. The mixed-use trail on the east side of Alaskan Way would be extended north from its existing terminus to Clay Street, where it would cross Alaskan Way and continue on the west side of the street to Olympic Sculpture Park and Myrtle Edwards Park.

1.7.3.3 Habitat Improvements

Like Alternatives A and B, Alternative C would include a number of habitat improvements. These improvements would extend 10 to 45 feet from the face of the new seawall. An intertidal bench would be installed at the base of the seawall to form a shallow angle to the seafloor and provide shallower water for juvenile salmon migration. Installation of a textured seawall face panel would support the development of marine nearshore habitat. Restoration of riparian areas along the back beach area in Zone 1 would include species of riparian and beach shrubs native to Puget Sound.

² The Elliott Bay Seawall Project would build the additional lane from S. Washington Street to Madison Street. The portion between S. King Street and S. Washington Street would be constructed as part of the Alaskan Way Viaduct Replacement Project.

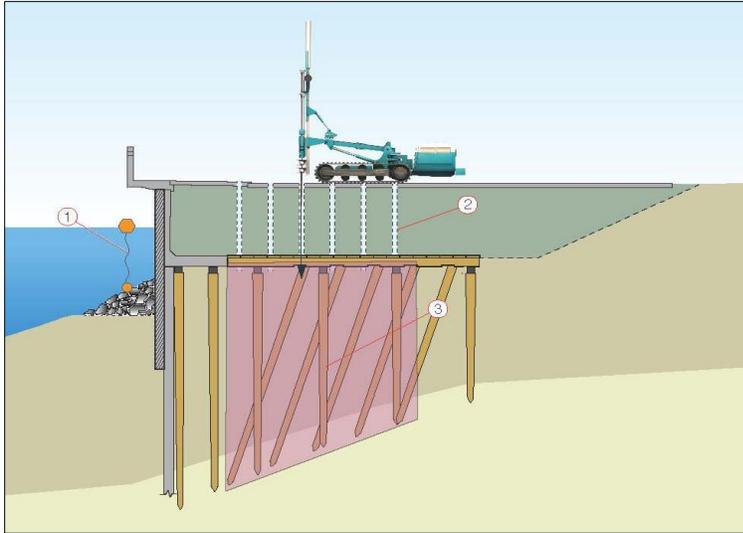
1.7.3.4 Upland Improvements

Under Alternative C, the restored sidewalk space would be enhanced with LPS and include new or upgraded railings, historic elements, wayfinding features, and lighting. Water-viewing opportunities would be preserved or enhanced at various locations, and additional viewing opportunities would be included at Spring and University Streets in Zone 3. In Zone 1, the Washington Street Boat Landing would be restored and reinstalled within the S. Washington Street right-of-way.

1.7.3.5 Construction and Schedule

For Alternative C, the construction method proposed for the primary structural element of the seawall is soil improvement. Alternative C assumes that the soil improvement would be accomplished from street level, without excavating the soils over the relieving platform. After seawall stabilization, the area above the relieving platform would be excavated to allow for installation of the new seawall face and sidewalk. With this method, construction of the Central Seawall would require approximately three construction seasons with two summer shutdown periods. Subsequent construction of the North Seawall would require an additional four construction seasons.

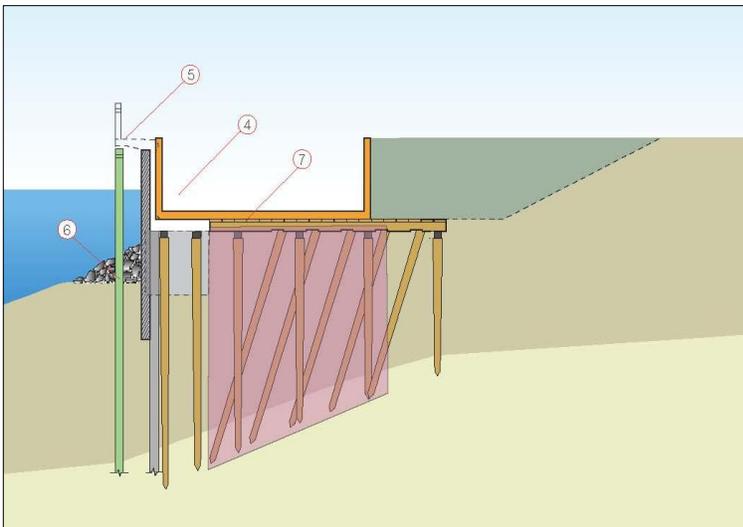
The anticipated construction activities and probable sequence for Alternative C, using soil improvement, are depicted below. The figures describe four primary stages of work that would occur along the waterfront. The activities within each zone would vary depending on the type of existing seawall present. Figures 1-14 through 1-17 are representative of the expected Alternative C construction sequence and depict the Type A seawall.



Alternative C, Stage 1

1. Place in-water containment curtain
2. Pre-drill and fill existing voids beneath timber relieving platform
3. Install soil improvement (jet grout)

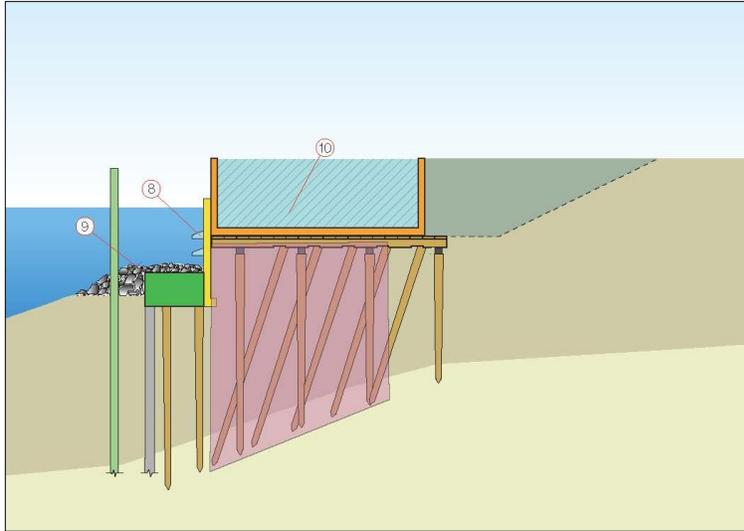
Figure 1-14. Alternative C, Stage 1



Alternative C, Stage 2

4. Relocate utilities
5. Remove existing sidewalk and pavement
6. Install temporary containment wall
7. Excavate to timber relieving platform

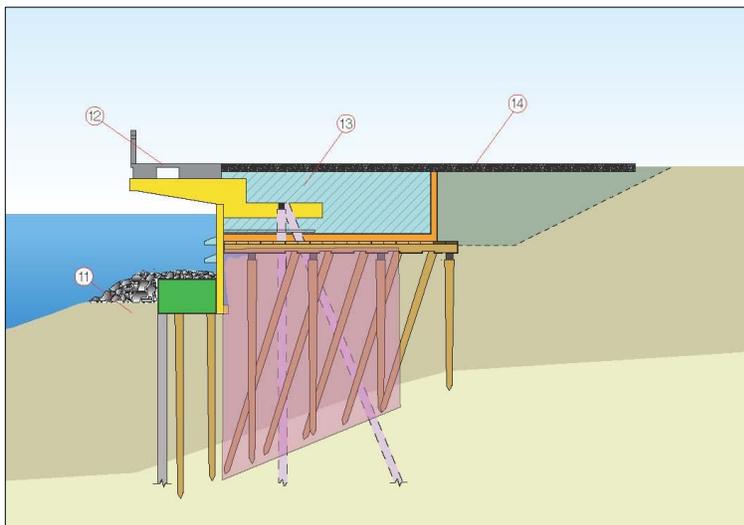
Figure 1-15. Alternative C, Stage 2



Alternative C, Stage 3

- 8. Remove portion of existing wall and install new face panels and habitat shelves
- 9. Place habitat bench

Figure 1-16. Alternative C, Stage 3



Alternative C, Stage 4

- 11. Remove temporary containment wall
- 12. Install cantilevered sidewalk with light penetrating surface
- 13. Restore utilities
- 14. Restore roadway for local traffic

Figure 1-17. Alternative C, Stage 4

TABLE 1-1. COMPARISON OF FEATURES OF THE THREE ELLIOTT BAY SEAWALL PROJECT BUILD ALTERNATIVES

Project Feature	Alternative A	Alternative B	Alternative C
Construction Method	Soil improvement	Braced soldier piles	Soil improvement
Central Seawall Construction Duration	3 construction seasons	5 construction seasons	3 construction seasons
North Seawall Construction Duration	4 construction seasons	4 construction seasons	4 construction seasons
Zone 1			
Face of Seawall Location	Existing location	0 to 15 feet landward	15 feet landward
Habitat Improvements	<ul style="list-style-type: none"> Riparian plantings Substrate enhancement Cobble reef Textured seawall face 	<ul style="list-style-type: none"> Riparian plantings Substrate enhancement Cobble reef Expanded habitat bench and backshore 	<ul style="list-style-type: none"> Riparian plantings Substrate enhancement Expanded habitat bench and backshore
Upland Improvements	<ul style="list-style-type: none"> Washington Street Boat Landing restoration New or restored railings 	<ul style="list-style-type: none"> Washington Street Boat Landing restoration (up to 15 feet waterward of existing location) Steps, boardwalk, and overlook (Option 1) Short-stay boat moorage New or restored railings 	<ul style="list-style-type: none"> Washington Street Boat Landing restoration (up to 15 feet waterward of existing location) New or restored railings
Transportation Features	<ul style="list-style-type: none"> Restored sidewalk Restored multi-use trail Restored roadway with additional northbound lane from S. Washington to Madison Street 	<ul style="list-style-type: none"> Restored sidewalk Restored multi-use trail Restored roadway 	<ul style="list-style-type: none"> Restored sidewalk Restored multi-use trail Restored roadway with additional northbound lane from S. Washington to Madison Street
Zone 2			
Face of Seawall Location	15 feet landward	15 feet landward	15 feet landward
Habitat Improvements	<ul style="list-style-type: none"> Confined substrate habitat bench Textured seawall face Intermittent LPS 	<ul style="list-style-type: none"> Confined substrate habitat bench Textured seawall face Continuous LPS 	<ul style="list-style-type: none"> Confined substrate habitat bench Textured seawall face Continuous LPS
Upland Improvements	<ul style="list-style-type: none"> Same as existing 	<ul style="list-style-type: none"> Same as existing 	<ul style="list-style-type: none"> Same as existing
Transportation Features	<ul style="list-style-type: none"> Restored sidewalk Restored multi-use trail Restored roadway with additional northbound lane from S. Washington to Madison Street 	<ul style="list-style-type: none"> Restored sidewalk Restored multi-use trail Restored roadway 	<ul style="list-style-type: none"> Restored sidewalk Restored multi-use trail Restored roadway with additional northbound lane from S. Washington to Madison Street

Project Feature	Alternative A	Alternative B	Alternative C
Zone 3			
Face of Seawall Location	3 feet waterward	30 feet landward	10 to 15 feet landward
Habitat Improvements	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Textured seawall face • Intermittent LPS at piers • Riparian plantings 	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Textured seawall face • Continuous LPS • Riparian plantings 	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Textured seawall face • Continuous LPS
Upland Improvements	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Viewing area 	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Enhanced viewpoints with seating 	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Enhanced viewpoints
Transportation Features	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway
Zone 4			
Face of Seawall Location	10 feet landward	30 to 75 feet landward	10 feet landward
Habitat Improvements	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Substrate enhancements • Textured seawall face • Intermittent LPS at piers • Cobble reefs • Riparian plantings 	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Substrate enhancements • Textured seawall face • Continuous LPS • Cobble reefs • Riparian plantings • Daylighting of water plaza 	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Substrate enhancements • Textured seawall face • Continuous LPS • Daylighting of portions of cantilevered sidewalk
Upland Improvements	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Viewing area 	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Creation of a land or water plaza • Enhanced viewpoints 	<ul style="list-style-type: none"> • New or restored railings • Street plantings
Transportation Features	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway

Project Feature	Alternative A	Alternative B	Alternative C
Zone 5			
Face of Seawall Location	10 feet landward	10 feet landward	10 feet landward
Habitat Improvements	<ul style="list-style-type: none"> • Confined substrate habitat bench • Riparian plantings • Textured seawall face 	<ul style="list-style-type: none"> • Confined substrate habitat bench • Riparian plantings • Textured seawall face 	<ul style="list-style-type: none"> • Confined substrate habitat bench • Riparian plantings • Textured seawall face • Continuous LPS
Upland Improvements	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Viewing area 	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Expanded viewpoints 	<ul style="list-style-type: none"> • New or restored railings • Street plantings • Enhanced viewpoints
Transportation Features	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Restored multi-use trail • Restored roadway
Zone 6			
Face of Seawall Location	10 feet landward	10 feet landward	10 feet landward
Habitat Improvements	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Substrate enhancement • Textured seawall face • Riparian plantings • Intermittent LPS at piers • Cobble reefs 	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Substrate enhancement • Textured seawall face • Riparian plantings • Intermittent LPS at piers • Cobble reefs 	<ul style="list-style-type: none"> • Confined substrate habitat bench and expanded habitat bench • Substrate enhancement • Textured seawall face • Riparian plantings • Continuous LPS
Upland Improvements	<ul style="list-style-type: none"> • Restored or new railings • Viewing area 	<ul style="list-style-type: none"> • Restored or new railings • Enhanced viewpoints 	<ul style="list-style-type: none"> • Restored or new railings • Enhanced viewpoints
Transportation Features	<ul style="list-style-type: none"> • Restored sidewalk • Extended multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Extended multi-use trail • Restored roadway 	<ul style="list-style-type: none"> • Restored sidewalk • Extended multi-use trail • Restored roadway

Note: LPS – light-penetrating surfaces

This page intentionally left blank.

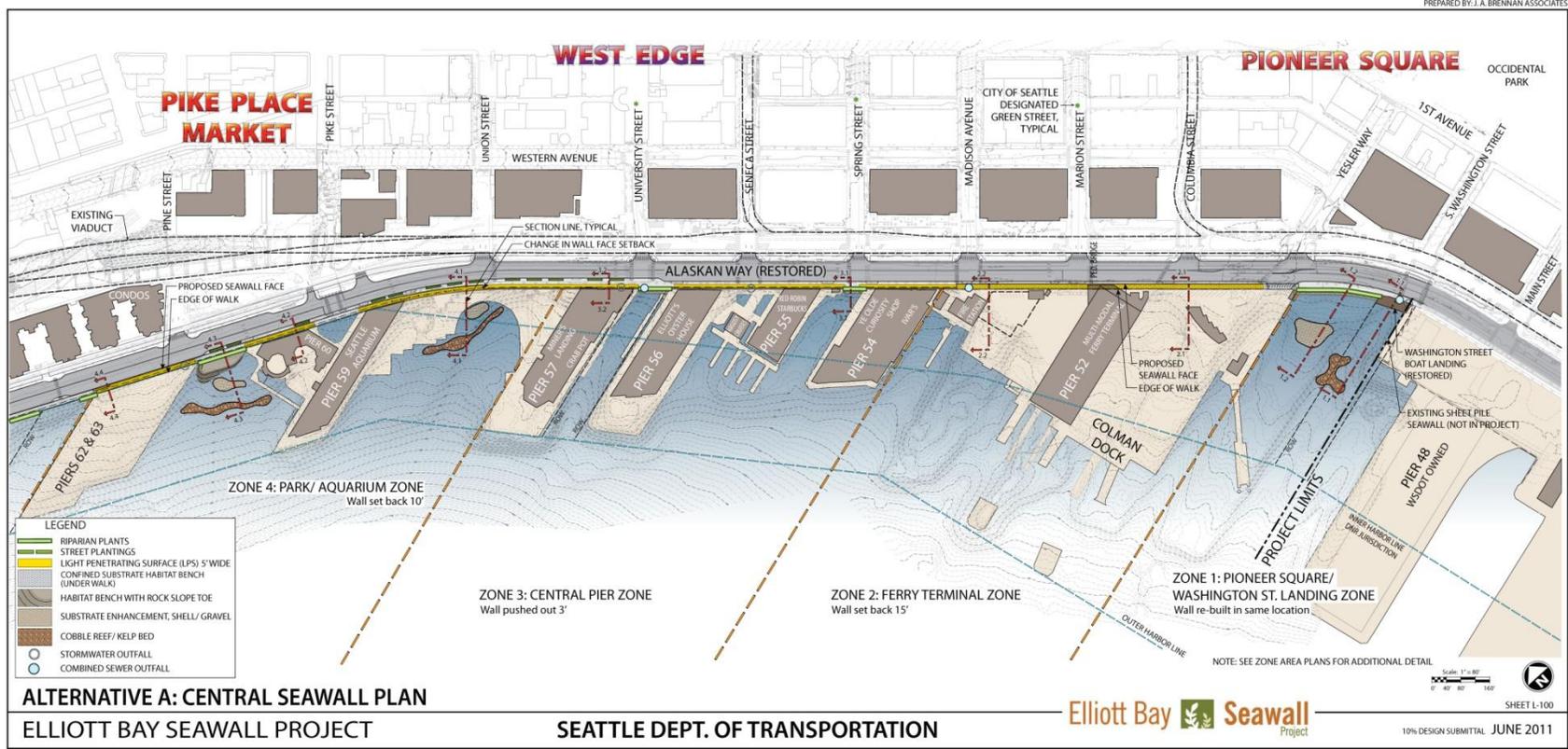


Figure 1-18. Alternative A: Central Seawall Plan

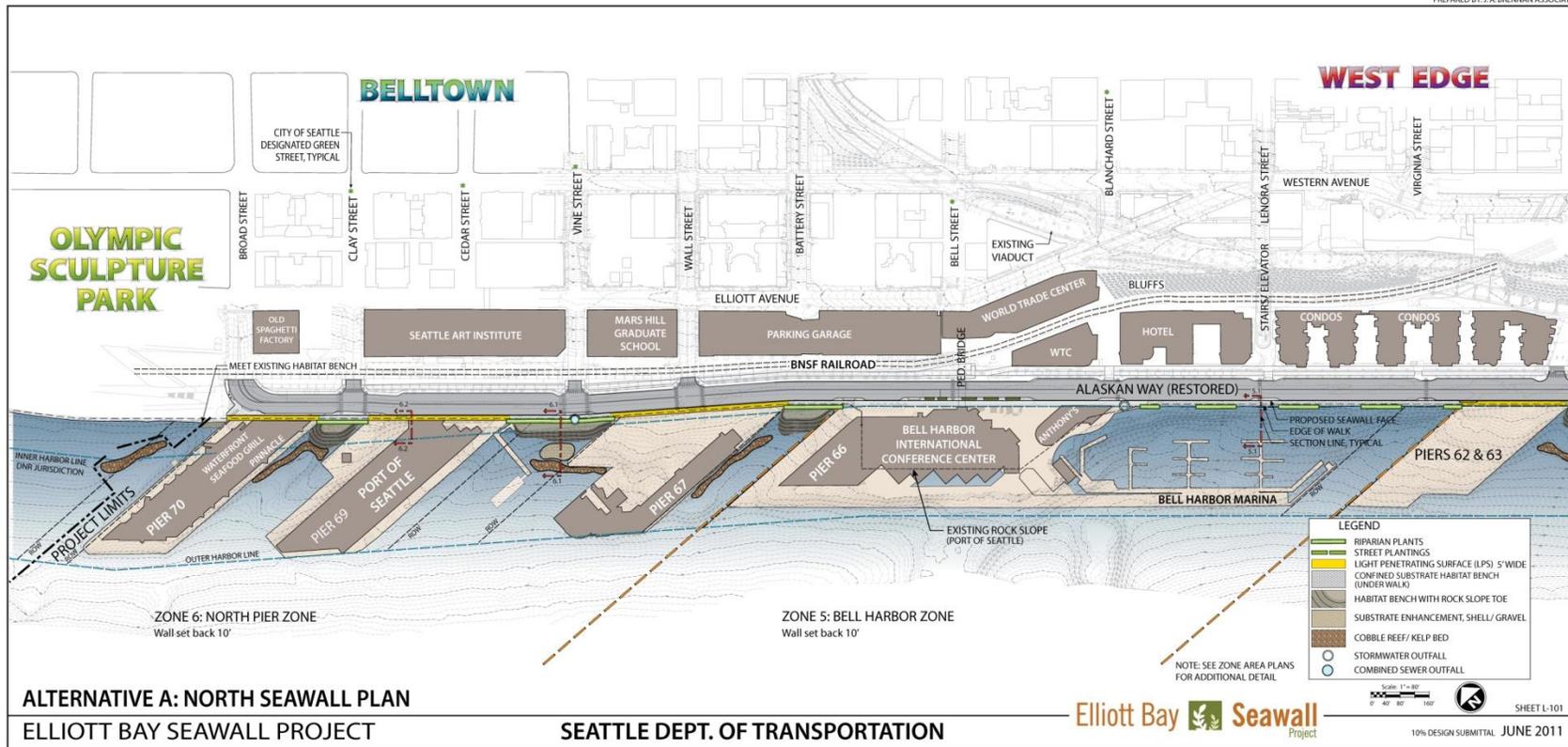


Figure 1-19. Alternative A: North Seawall Plan

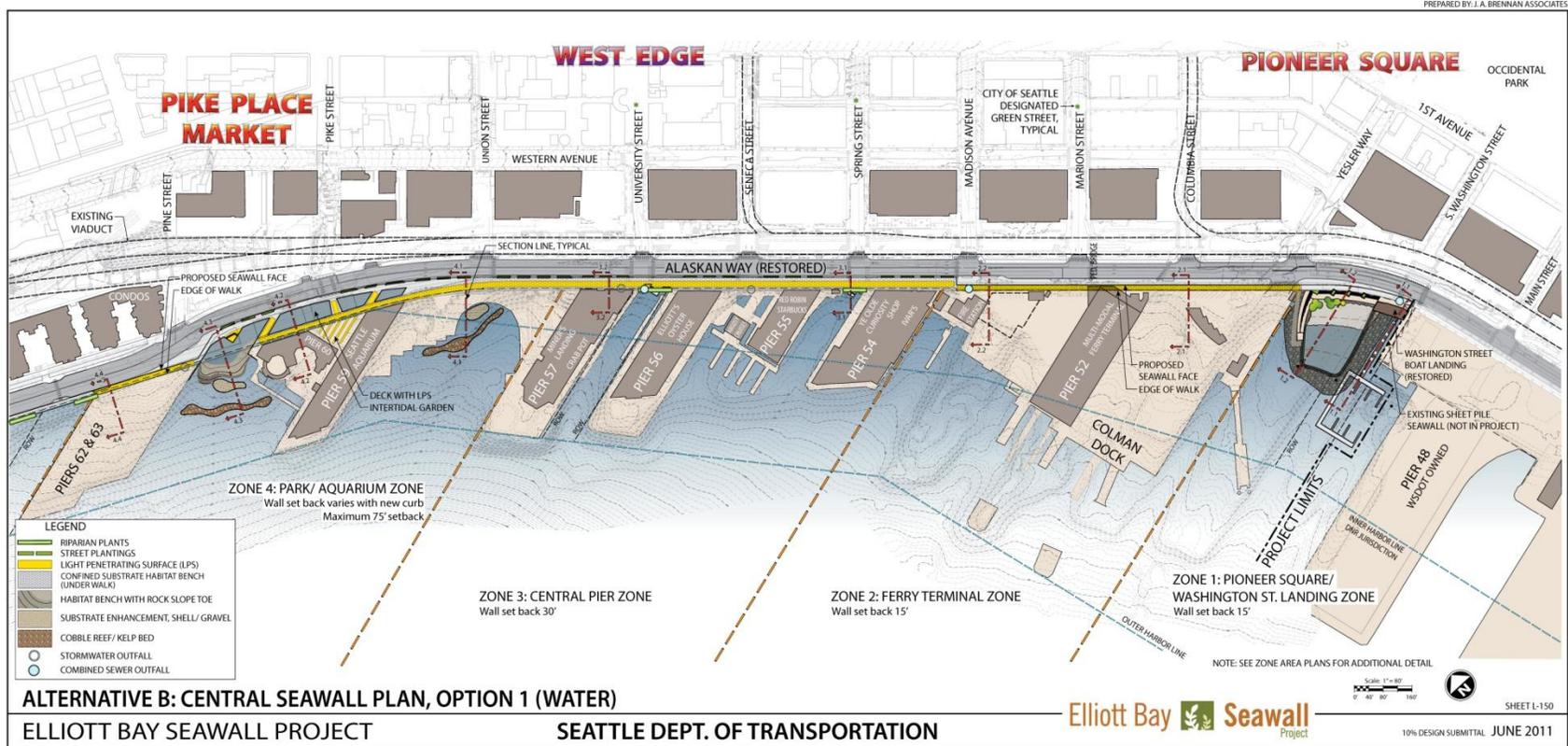


Figure 1-20. Alternative B: Central Seawall Plan, Option 1

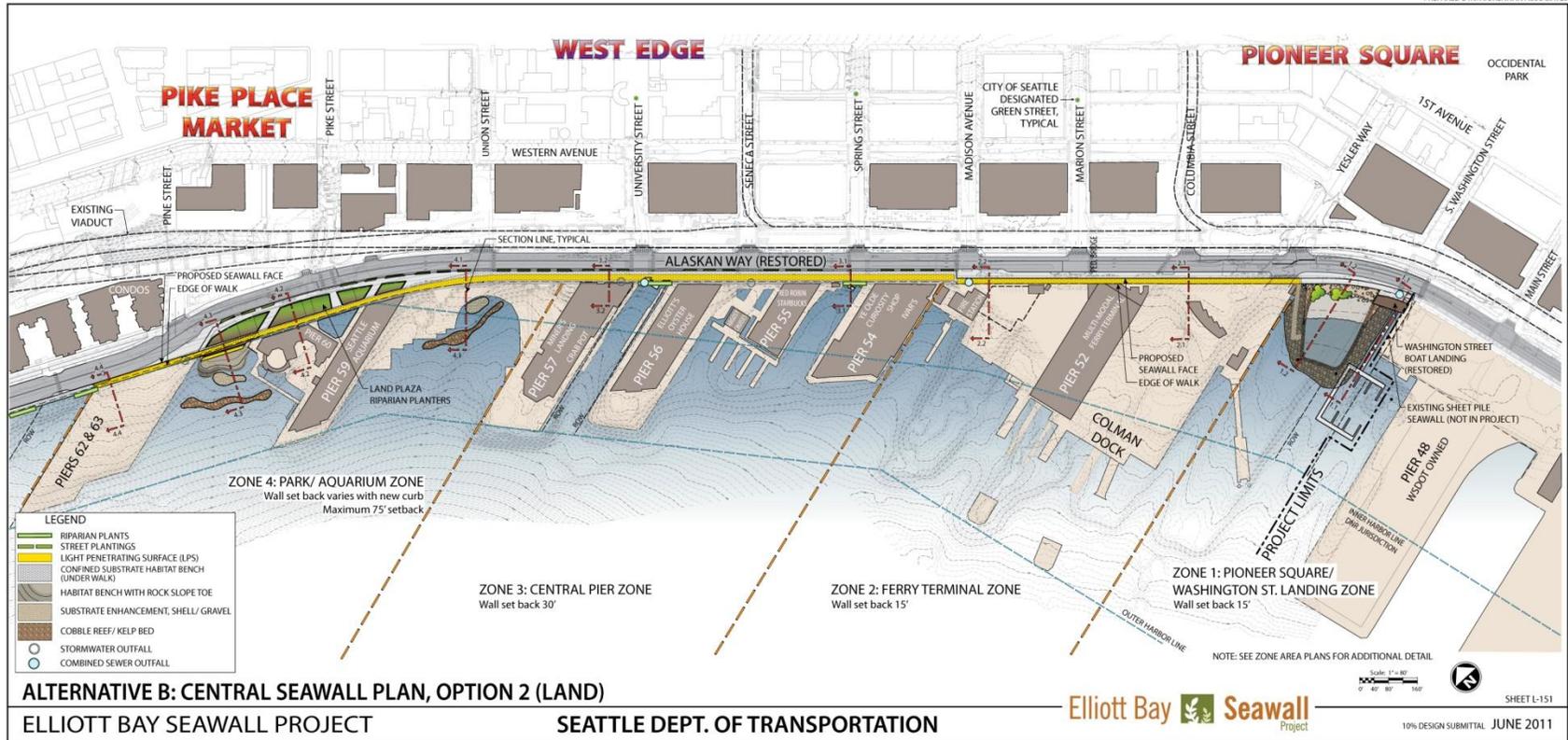


Figure 1-21. Alternative B: Central Seawall Plan, Option 2

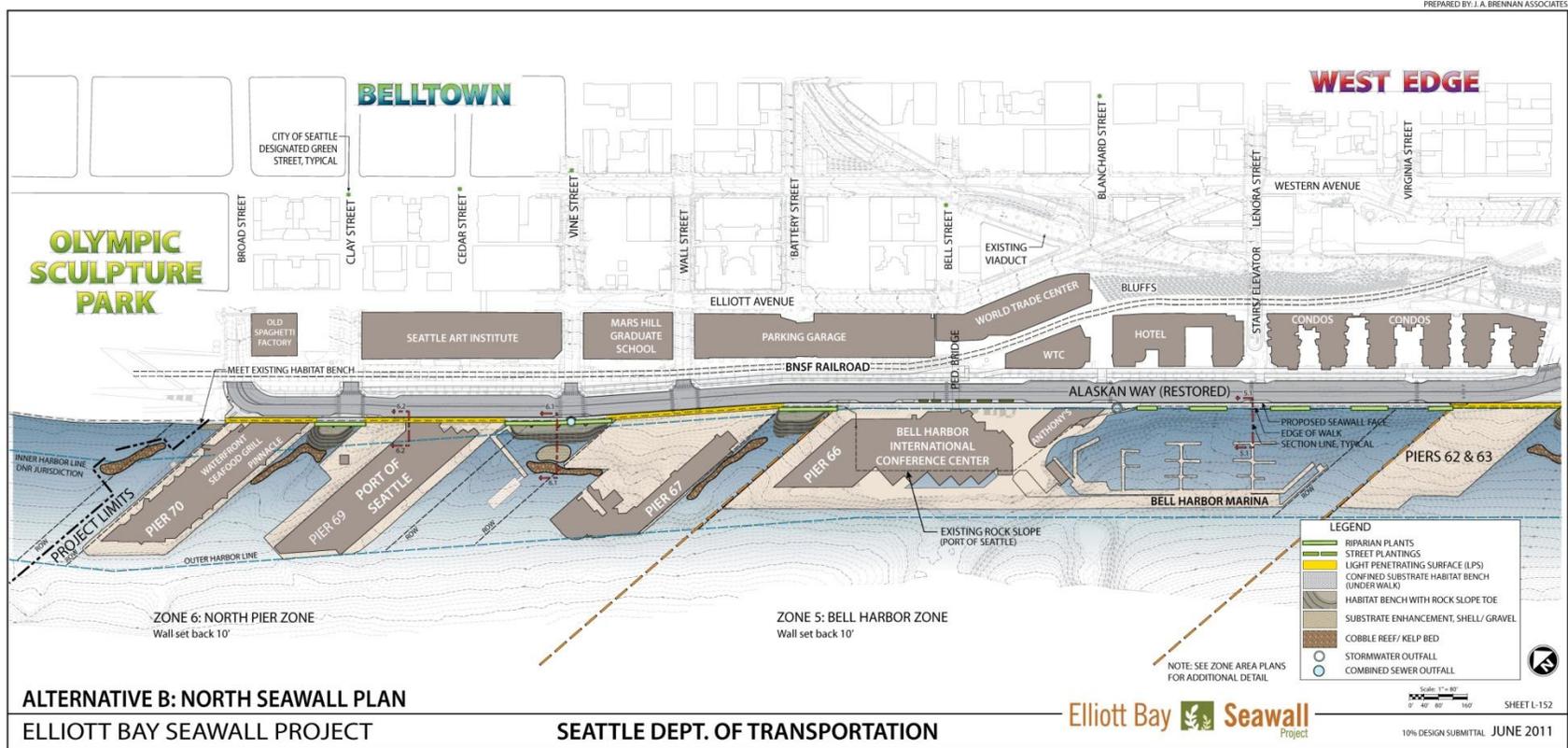


Figure 1-22. Alternative B: North Seawall Plan

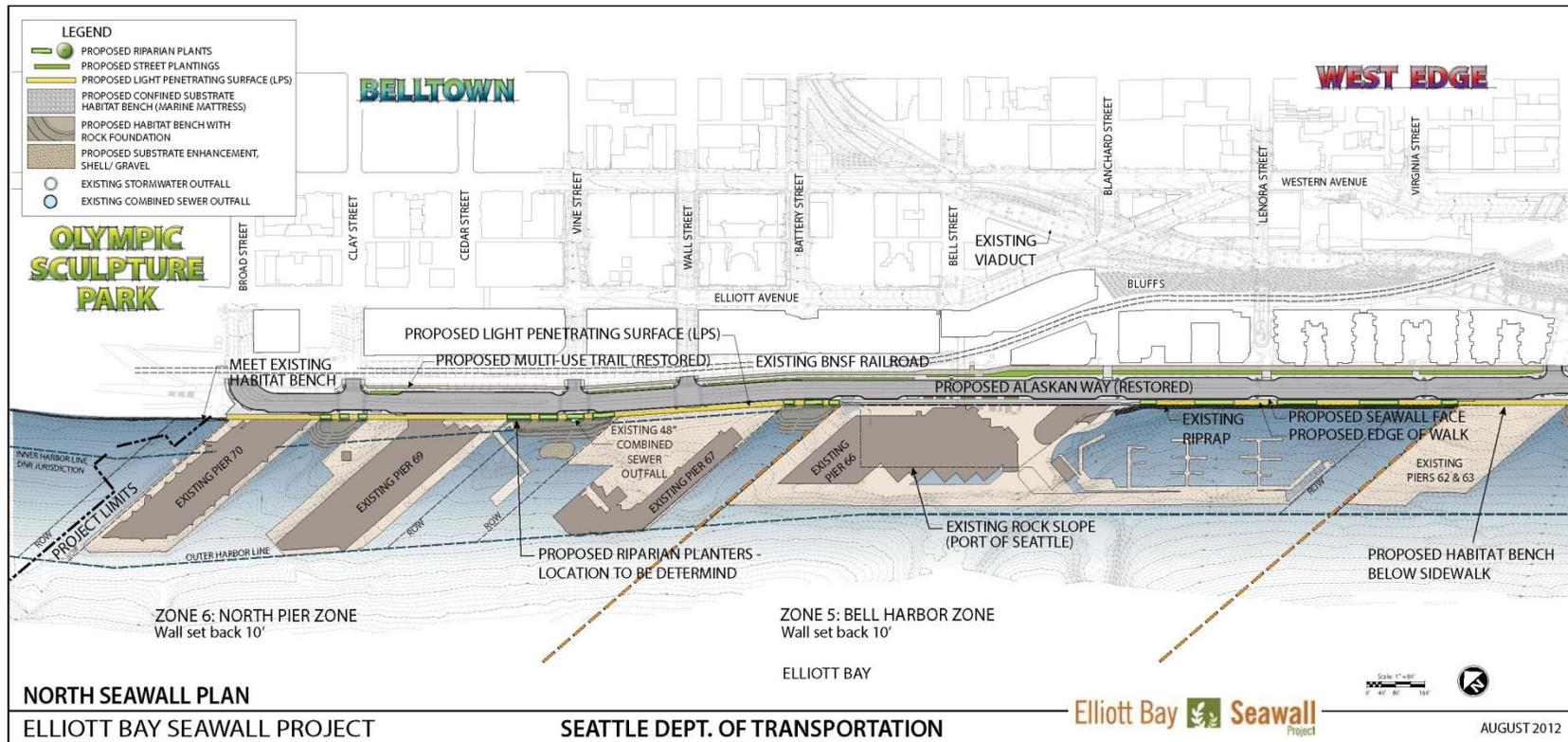


Figure 1-24. Alternative C: North Seawall Plan

This page intentionally left blank.

CHAPTER 2. METHODOLOGY

The *Elliott Bay Seawall Project Land Use, Shorelines, and Parks and Recreation Methodology Technical Memorandum* (SDOT 2011) contains a detailed description of the methodology used for this discipline report. The following sections summarize the methodology used to assess direct project effects on land use, shorelines, and parks and recreation, as well as secondary (indirect) effects of other projects on those resources.

2.1 LAND USE AND SHORELINES

The affected environment discussion is based on an update of material initially prepared for the *Existing Conditions Report, Alaskan Way Seawall Replacement Project Feasibility Study* (USACE 2008). The updates include new land use and zoning maps and a current list of planned developments within the study area, obtained from the City of Seattle. Field visits were conducted to confirm existing land uses. The discussion of a number of local and regional planning documents (Puget Sound Regional Council, King County and City of Seattle) was updated to reflect recent amendments or adoptions of new plans and policies.

The land use and shorelines impact analysis involved comparing conceptual drawings of the proposed improvements with maps, aerial photos, applicable codes and field notes. The construction analysis utilized proposed construction sequencing charts and construction footprint drawings to determine potential effects. The effects were assessed through consideration of potential acquisitions (whole or partial) that would impact or displace an existing use; project elements that would limit or change access (vehicular or pedestrian) or parking supply; relocation of sidewalks and/or roadways; relocation of the seawall or the addition of in-water features such as habitat benches, beaches, floats and piers; or the introduction of adjacent impacts, such as additional traffic, noise or other impacts that would affect land use and shorelines.

An important element of the land use and shorelines analysis is a discussion of the project's relationship to various federal, state and local planning regulations and policies, including an analysis of consistency with applicable use and development standards in the City of Seattle's Land Use Code, Shoreline Master Program and the Critical Areas Ordinance, as well as an analysis of consistency with the Coastal Zone Management Act (CZMA). In all instances, the analysis is based on the codes in place at the time this report was prepared. It should be noted that the City's Shoreline Master Program is being revised, and City Council action regarding the Shoreline Master Program is expected in fall 2012. A supplemental memorandum to this Discipline Report will be prepared after final approval of the updated Shoreline Master Program.

Coordination and information from USACE regarding compliance with Sections 401 and 404 of the Clean Water Act (CWA) for fill in waters of the United States is included. Additionally, compliance with Section 10 of the Rivers and Harbors Act concerning navigation and Section 402 of the CWA for direct and indirect discharges to waters of the state is addressed.

2.2 PARKS AND RECREATION

The affected environment discussion is based on an update of material initially prepared for the *Existing Conditions Report, Alaskan Way Seawall Replacement Project Feasibility Study* (USACE 2008). Pertinent information from previous draft environmental impact documents prepared for other recent projects along the waterfront was also reviewed. The updated elements include the status of Pier 48 and the former Alaskan Square Park; Washington State Ferries Colman Dock plans; Tillicum Village operations; and waterfront art works. Field checks were also conducted to confirm existing parks and recreational uses along the seawall alignment.

The parks and recreation impact analysis is based on the facility elements (viewpoints, recreational opportunities, layout, etc.), typical users (commuters, tourists, residents, etc.), setting (views of the water and distant features across the water, proximity to similar uses, etc.) and connections to other uses. Expansions of park and recreational facilities as called for in adopted plans are also identified. Information examined includes (1) base maps that show location, topography, access patterns; (2) park, trail and recreation location maps; (3) park and recreation development plans; (4) public art installations; and (5) permit records for public and private projects in the study area. The report primarily addresses public facilities and legally required public access on private property.

An important element of the parks and recreation analysis is a discussion of the project's consistency with various planning regulations and policies. Among the considerations are shoreline access (and consistency with the policies of Washington State Department of Natural Resources [DNR] as property owner of certain aquatic lands), the City's Green Streets initiative, and adopted land use and parks policies.

Effects of the project alternatives are assessed through consideration of any potential acquisition (whole or partial) that would impact or displace an existing parks or recreational use; project elements that would limit or change access (vehicular or pedestrian) or parking supply, relocation of trails, changes in views from parks or recreational facilities; or the introduction of adjacent impacts, such as additional traffic, noise or other impacts that would negatively change the parks and recreation user experience.

2.3 SECONDARY (INDIRECT) IMPACTS METHODOLOGY

The evaluation of indirect or secondary impacts is based on an analysis of changes in land use, shorelines and parks, and recreation facilities that may occur later in time or further removed in distance as a result of this project. Elements considered include improvements or degradations in access, mobility, noise levels, air quality and visual quality. If the changes are reflected in currently adopted comprehensive or neighborhood plans, the analysis considers whether the project would result in the effects occurring earlier than might otherwise be the case.

CHAPTER 3. COORDINATION AND INFORMATION SOURCES

3.1 INFORMATION SOURCES

The following documents have been reviewed as part of the Land Use, Shorelines, and Parks and Recreation analysis:

- Alaskan Way Viaduct and Seawall Replacement Project Land Use and Shoreline Technical Memoranda (FHWA et al. 2004, 2006, 2010);
- Alaskan Way Viaduct and Seawall Replacement Project Parks and Recreation Technical Memoranda (FHWA et al. 2004, 2006, 2010);
- Belltown Neighborhood Plan (City of Seattle 1998);
- Bicycle Master Plan (City of Seattle 2007a);
- Center City Access Strategy (SDOT 2004);
- Center City Public Realm Guide (City of Seattle 2010);
- Center City Circulation Study (SDOT 2003);
- Central Waterfront Committee Strategic Plan for Realizing the Waterfront Seattle Vision (Central Waterfront Committee 2012a);
- Central Waterfront Master Parks Plan Environmental Impact Statement (City of Seattle, Seattle Parks and Recreation 2006);
- City of Seattle 2012 Transportation Action Agenda (SDOT 2012i);
- City of Seattle Comprehensive Plan, including 2011–2012 amendments (City of Seattle 2005);
- City of Seattle Transit Master Plan (SDOT 2012j);
- Clean Water Act (Pub. L. No 92-500);
- Coastal Zone Management Act (Pub. L. No. 109-58);
- Commercial Core Neighborhood Plan (City of Seattle 1999);
- Concept Design and Framework Plan for Seattle’s Central Waterfront (Central Waterfront Committee 2012b);
- Design Review: Guidelines for Downtown Development (City of Seattle Department of Design, Construction, and Land Use 1999);
- Downtown Historic Resources Survey and Inventory (City of Seattle 2007b);
- Downtown Seattle 2009: Public Spaces and Public Life (Gehl Architects 2009);
- Downtown Urban Center Neighborhood Plan (City of Seattle Downtown Urban Center Planning Group 1999);
- Green Streets Design Guidelines and Review Process (SDOT Director’s Rule 2-07, DPD Director’s Rule 11-2007);
- Green Street Design, Permit and Construction Process (City of Seattle 2011, Chapter 6);

- Pedestrian Master Plan (SDOT 2009);
- Pioneer Square Neighborhood Plan (Pioneer Square Planning Committee 1998);
- King County Comprehensive Plan (King County 2010);
- Puget Sound Regional Council Transportation 2040 Plan (PSRC 2010);
- Puget Sound Regional Council Vision 2040 Plan (PSRC 2009);
- Port of Seattle Parks and Recreation Access Guide (Port of Seattle 2009);
- Port of Seattle Shoreline Plan (Port of Seattle 2007);
- Seattle Aquarium Strategic Plan 2011-2030 (Seattle Aquarium 2011);
- Seattle Municipal Code (SMC):
 - Historic Preservation (SMC 25.12– 25.32);
 - Land Use Code (SMC Title 23);
 - Regulations for Environmentally Critical Areas (SMC 25.09);
 - Environmental Protection and Historical Preservation (SMC 25);
 - Landmarks Preservation (SMC 25.12);
 - Pike Place Market Historical District Standards and Guidelines (SMC 25.24; 2010);
 - Pioneer Square Historical District Standards and Guidelines (SMC 23.66; 2003);
 - Shoreline Management Program (SMC 23.60 Shoreline District);
 - Zoning Code (SMC Title 23) and Seattle Municipal Code Zoning Map;
- Seattle’s Parks and Recreation 2011 Development Plan (City of Seattle, Seattle Parks and Recreation 2011);
- Seattle Parks and Recreation Strategic Action Plan: 2009–2013 (City of Seattle, Seattle Parks and Recreation 2008, 2010);
- Washington State Department of Natural Resources policies for public use of aquatic lands (WAC 332-30-122 and 332-30-131);
- Washington State Hydraulic Code (Revised Code of Washington [RCW] Chapter 77.55); and
- Washington State Shoreline Management Act (RCW 90.58).

3.2 COORDINATION

In addition to reviewing the original source materials listed above, the consultant team received a list of planned development projects in or near the project area that are in permit and/or design review, recently permitted or under construction from the Seattle Department of Planning and Development (DPD). The report author also coordinated with other discipline authors concerning both impact analysis and the development of mitigation measures to ensure a consistent approach to both topics.

CHAPTER 4. AFFECTED ENVIRONMENT

4.1 LAND USE AND SHORELINES

4.1.1 Existing Land Uses

The study area for the purposes of the land use and shorelines analysis is located within several neighborhood planning areas, but is generally focused between S. Washington Street on the south, Broad Street on the north, First Avenue on the east and Elliott Bay on the west. The area includes the piers that extend waterward from the seawall and the immediate shoreline along Elliott Bay adjacent to Alaskan Way. The study area also includes state-owned aquatic lands beyond the inner harbor line that are classified as harbor areas.

The study area contains a variety of land use zones which accommodate a wide range of uses, including office, hotel, retail, government and residential. Figure 4-1 provides a map of the Seattle urban village boundaries. Figure 4-2 shows existing land uses in and around the study area. Note that all land beyond the outer harbor line in Elliott Bay is classified as CN (Conservancy Navigation). Following is a discussion of the specific land uses immediately adjacent to the Alaskan Way right-of-way.

4.1.1.1 S. Washington Street to Virginia Street (Central Seawall Study Area)

Port of Seattle Terminal 46 and WSDOT-owned Pier 48 abut the southern end of the Central Seawall Study Area on the west, while the Alaskan Way Viaduct (AWV) structure is to the east. The tracks for the Waterfront Streetcar, which is not currently in service, are located along the east side of Alaskan Way. The elevated AWV runs along the east side of the Alaskan Way surface street between S. Washington Street and Pike Street. Parking is the primary land use under the viaduct, though current detours related to the Alaskan Way Viaduct Replacement Project have removed parking south of Spring Street. Businesses between S. Washington and Pike Streets west of the seawall include the King County and Port of Kingston water taxis (Pier 50); Washington State Ferries (Colman Dock, Pier 52); Fire Station No. 5 at Pier 53; Ivar's Seafood Restaurant and Ye Olde Curiosity Shop on Pier 54; Red Robin restaurant and other retail and office uses on Pier 55; Argosy Cruises, Elliott's Restaurant, Mithun Architects and other retail uses on Pier 56; Miner's Landing restaurants, retail businesses, and the Seattle Great Wheel on Pier 57; and the Seattle Aquarium on Pier 59. East of the viaduct, a variety of retail, office and warehousing space occupy the multi-story buildings. Residential uses include a transitional residence, a hotel and the southern part of the Waterfront Landings Condominiums. Several surface parking lots (at Yesler Way and Spring Streets) are also located along the east side.

4.1.1.2 Virginia Street to Broad Street (North Seawall Study Area)

Land uses along the North Seawall Study Area between Virginia and Broad Streets consist of a mix of retail, residential, institutional, and office uses. Along the east side of the Alaskan Way right-of-way, adjacent buildings include the northern half of the Waterfront Landings Condominiums, the Marriott Hotel, the World Trade Center, a storage facility, the Art Institute of Seattle, a structured parking lot, Real Networks and the Spaghetti Factory with surface parking.

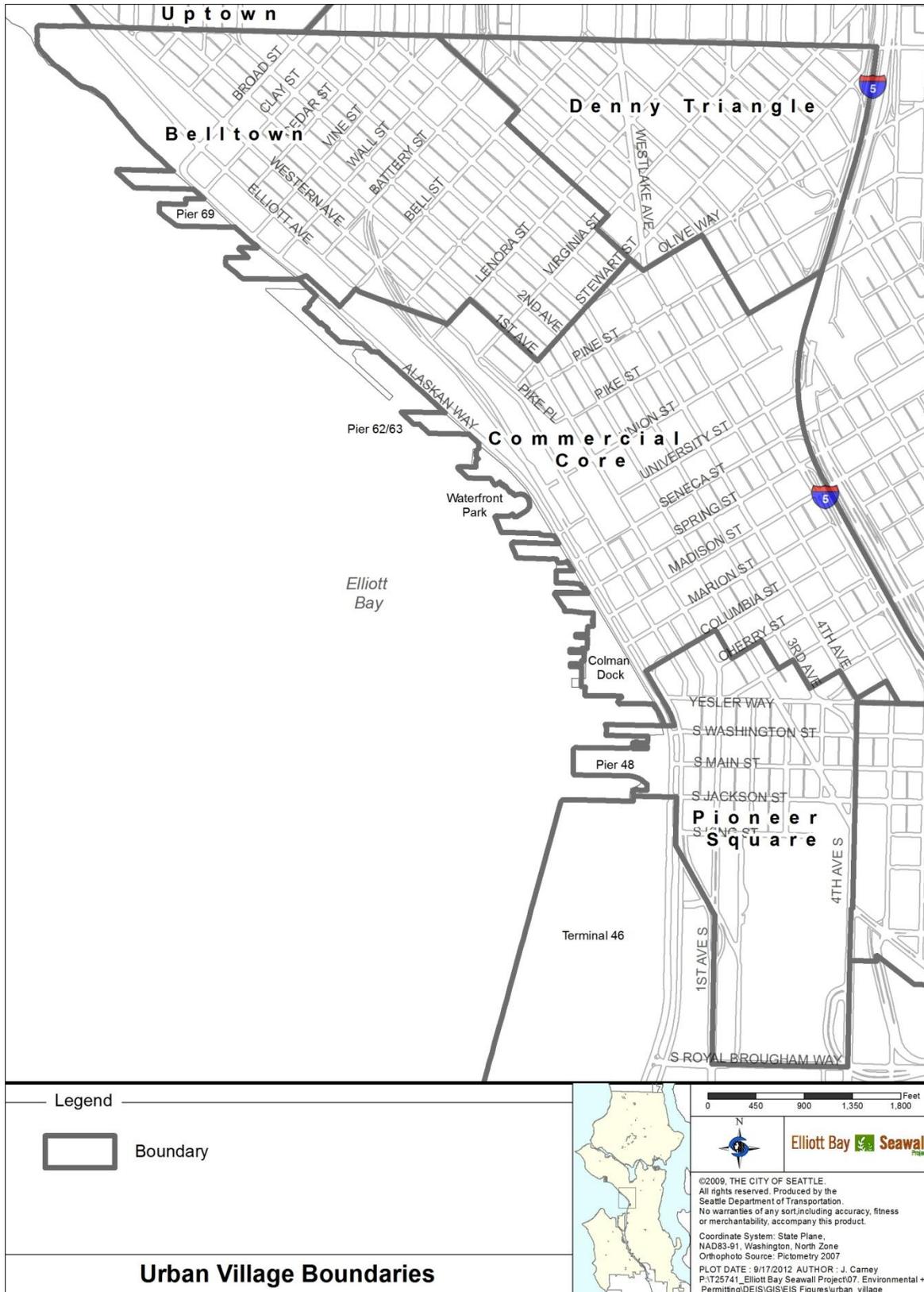


Figure 4-1. Elliott Bay Seawall Project Land Use Study Urban Village Boundaries
 (Source: City of Seattle 2007)

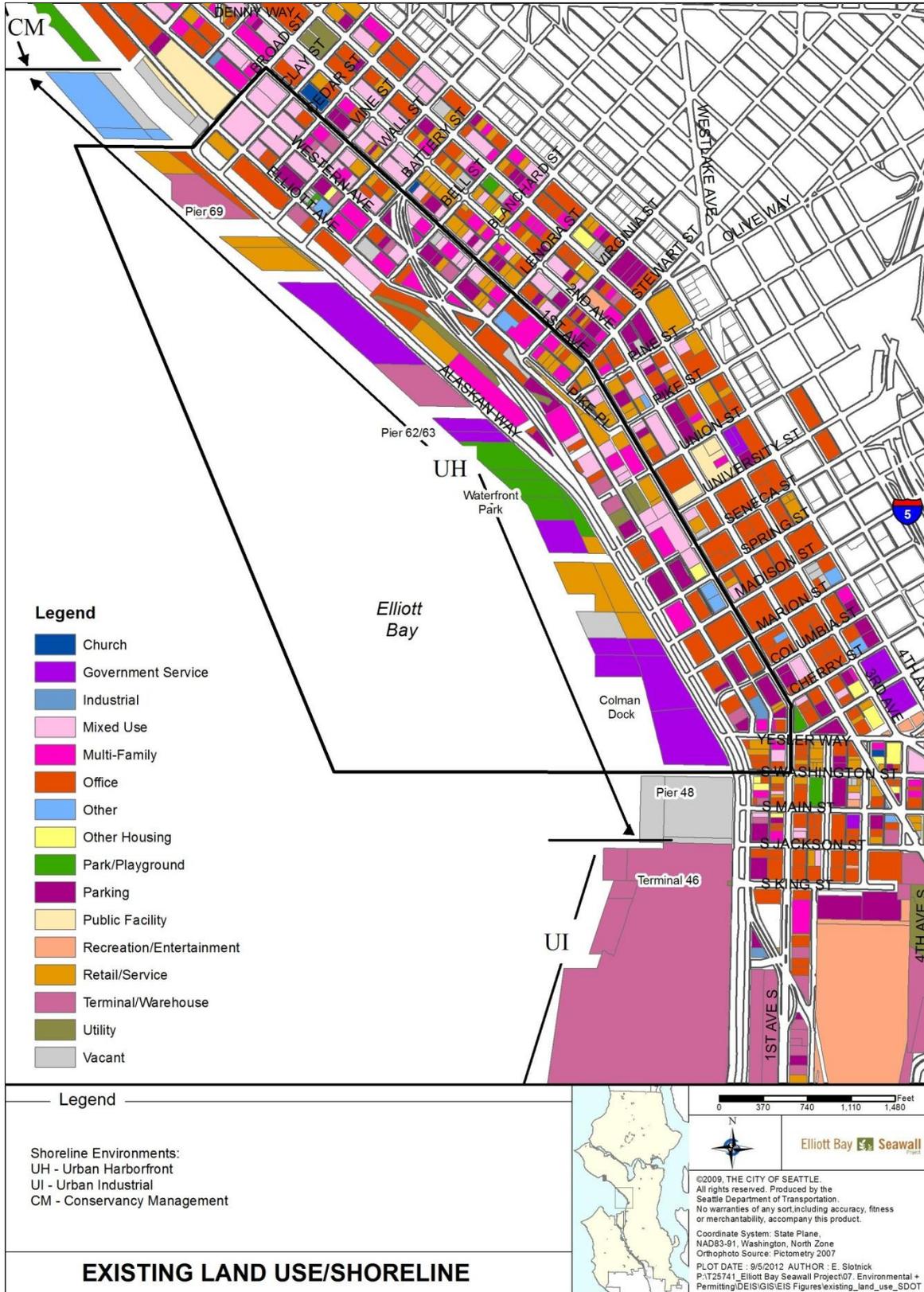


Figure 4-2. Existing Land Use and Shoreline Environments in the Elliott Bay Seawall Project Vicinity (Data Source: King County 2011)

Buildings housing a range of uses are located on piers along the west side of Alaskan Way, including the Bell Street Marina, Cruise Ship Terminal and Conference Center; plus Anthony’s restaurants on Pier 66; the Edgewater Hotel (Pier 67); the Port of Seattle Headquarters and Victoria Clipper terminal at Pier 69; and the Waterfront Seafood Grill and other retail and office uses (Graham and Dunn, public parking) on Pier 70.

4.1.1.3 Residential/Non-Residential Mix

A search of King County Geographic Information System (GIS)-based parcel data property reports in March 2011 for all parcels in the area bounded by Elliott Bay to the west, First Avenue to the east, Broad Street to the north and S. Washington Street to the south (i.e., the Central and North Seawall study areas) identified a total of approximately 5.2 million square feet in lot area. This space is made up of 4.1 million square feet of strictly non-residential parcels (77 percent of total parcels), 0.6 million square feet of mixed-use lot space (11 percent), and 0.6 million square feet of residential lot space (11 percent). All residential development in the study area is in the form of condominiums and apartment units distributed across 50 properties, for a total of 4,718 units, with approximately 4.2 million square feet of residential space. When added together, residential and mixed use (which includes a mix of residential and retail/service/office uses) becomes the largest land use category with a total lot square footage of approximately 1,200,000 square feet. Residential, mixed-use and non-residential use by subcategory as reported in the King County property reports is presented in Table 4-1 and Figure 4-3 (see note after Figure 4-3 for additional detail about subcategory definitions).

TABLE 4-1. LAND USE BY SUBCATEGORY IN THE ELLIOTT BAY SEAWALL PROJECT STUDY AREA

Land Use	Total Lot Square Footage
Government Service	1,013,177
Retail/Service	847,854
Office	726,278
Residential	603,064
Mixed Use	597,754
Terminal/Warehouse	451,555
Park/Playground	314,903
Parking	292,398
Utility	219,554
Vacant	129,423
Other	71,777
Industrial	19,173
Total Lot Square Feet	5,286,910

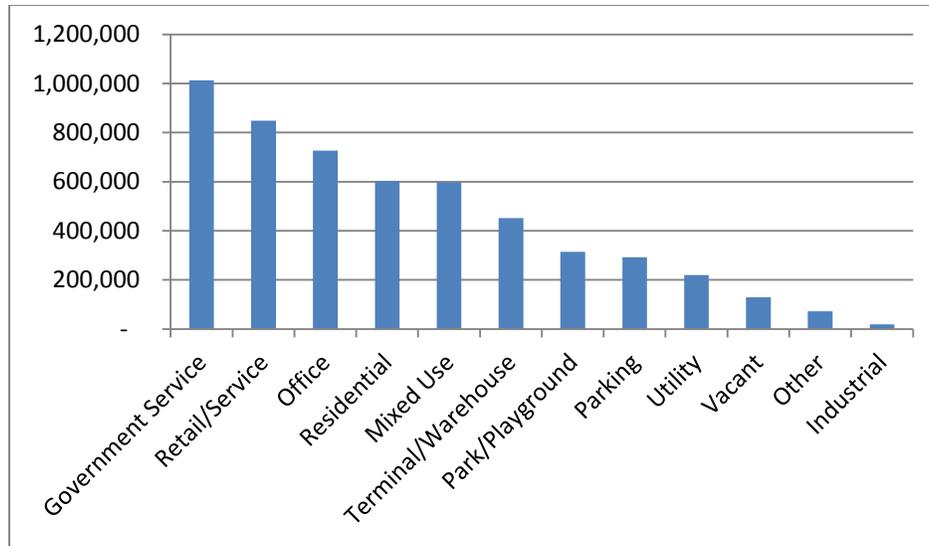


Figure 4-3. Total Parcel Area by Land Use in the Elliott Bay Seawall Project Study Area

Note: Some of the categories defined in Table 4-1 and Figure 4-3 are compilations of two or more King County Assessor's "Land Use" designations from parcel record data sets. Retail/service includes retail store, restaurant/lounge, historic property (retail), hotel/motel. Office includes office building, historic property (office), condominium (office) medical/dental office. Mixed use includes condominium (mixed use) and apartment (mixed use). Terminal/warehouse includes warehouse, terminal (marine/commercial fishing), mini warehouse, and historic property (loft/warehouse). Parking includes parking (garage), parking (commercial lot), and parking (associated). Utility includes utility, public; utility, private (radio/television); and right-of-way/utility, road. Vacant includes vacant (commercial), vacant (multi-family), and historic property (vacant land). Other includes historic property (miscellaneous), transferable development rights, no use listed, and shell structure. Residential includes apartment, apartment (subsidized), condominium (residential), historic property (residence), and rehabilitation center.

4.1.2 Recent and Planned Development

Development along the Seattle waterfront has changed substantially in the past decade. The focus has broadened from primarily water-dependent employment-related uses to becoming a major center for tourism and recreation, retail shopping, meeting and convention activities and entertainment. Residential development in the uplands area has also increased substantially.

New development in the vicinity of the seawall is likely to occur concurrently with seawall replacement construction activities. Under consideration are potential changes to Terminal 46 at the southern edge of the seawall, along with improvements at Colman Dock Ferry Terminal. The Concept Design and Framework Plan for Seattle's Central Waterfront (Central Waterfront Committee 2012a) proposes the creation of the Union Street Pier (where Waterfront Park currently is located) as a flexible open space with unobstructed views of Elliott Bay that can be used for activities ranging from kids play to programmed events and performances. Pier 62/63 is proposed for structural repair to once again serve as a primary public space on the waterfront. In addition, there are long-term plans to expand the Seattle Aquarium. Decisions on Seattle Aquarium expansion are being coordinated with the EBSP and Waterfront Seattle.

In the immediate EBSP vicinity, the following projects are currently underway:

- 888 Western Avenue – 16-story building with commercial space and 208 residential units, plus 124 parking spaces. Construction is nearing completion.
- 201 Alaskan Way South – New temporary maintenance and moorage barge for King County Passenger Ferries adjacent to and north of Pier 48. Construction is underway.
- Alaskan Way Viaduct Replacement Project – the bored tunnel is under construction, with completion expected in late 2015.

4.1.3 Zoning

The Seattle Land Use Code (SMC Title 23) provides zoning and development regulations for the City. These regulations set forth procedures for the use of land within the City. In addition to general use requirements, these provisions include specified height and size restrictions, as well as setback, parking, landscaping and view requirements. The Land Use Code also includes special overlay and review districts that identify other development requirements in addition to those noted for individual zones.

Following are some specific sections of the SMC that pertain to the replacement of the seawall or development along Alaskan Way.

- Shoreline Master Program (SMC Chapter 23.60) provides for the protection of shoreline ecosystems; encourages water-dependent uses; allows maximum public enjoyment of City shorelines; and preserves, enhances and increases views and access to the water.
- Design Review (SMC Chapter 23.41) ensures that new development enhances the character of the City and fits well into existing neighborhoods, and provides flexibility in meeting development standards while promoting communication between the City and developers throughout the construction process.

Zoning along Alaskan Way consists of a number of urban zones, including industrial, commercial and mixed use. A zoning map is provided as Figure 4-4. Generally, these zones allow a variety of potential uses at different intensities along the project corridor. The zoning code specifies allowable uses, standards for parking and building size, shape and location within each zone. Existing development along Alaskan Way is generally consistent with height and density regulations in these zoning classifications.

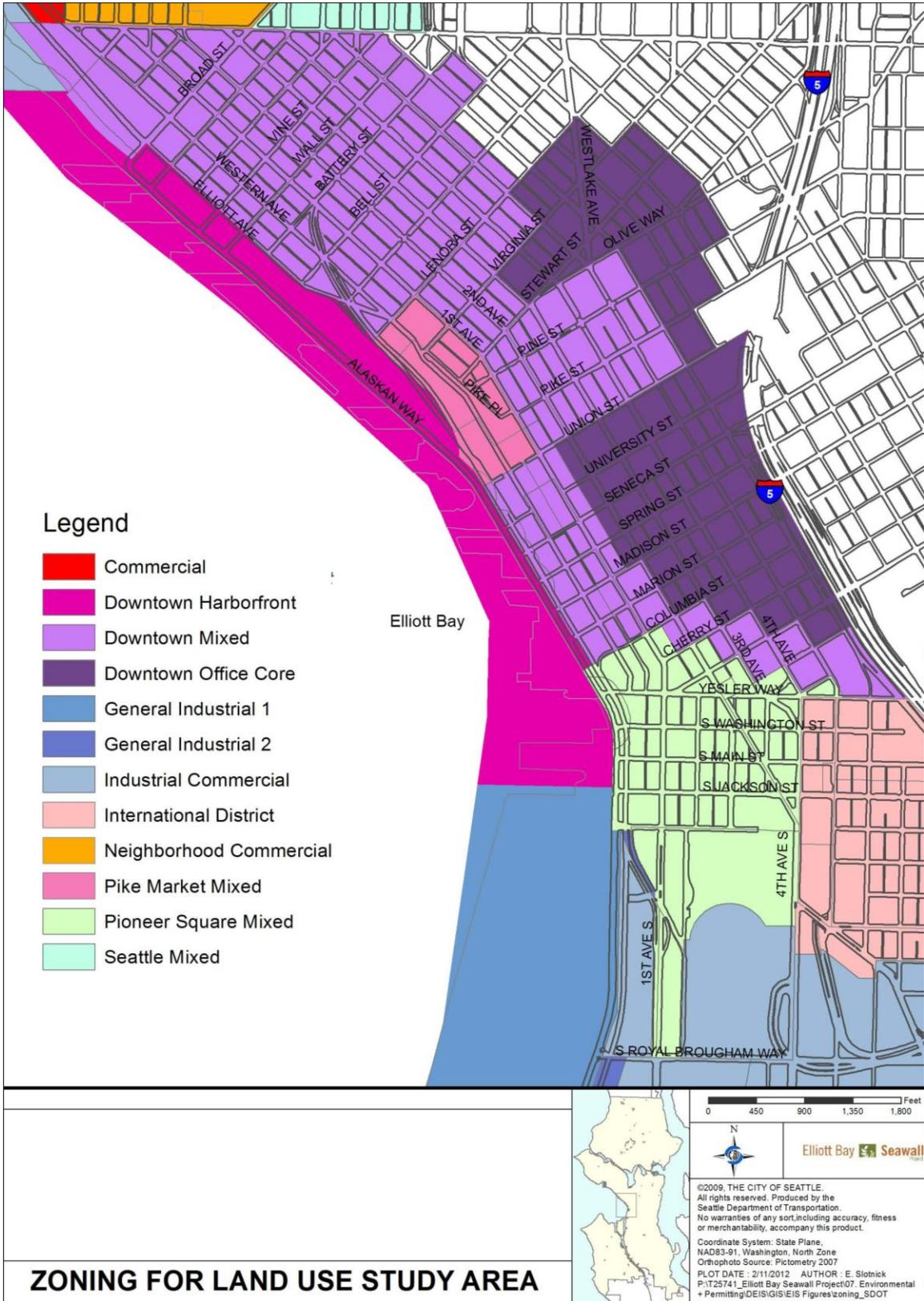


Figure 4-4. Zoning Map for the Elliott Bay Seawall Project Land Use Study Area and Vicinity (Data Source: City of Seattle Department of Planning and Development 2012)

The following zones, as described in the Seattle Land Use Code, are located in the project area starting from the south and moving north:

- Pioneer Square Mixed: Provides for less intensive uses than surrounding zoning in keeping with the historic designation of the Pioneer Square Preservation District.
- Downtown Harborfront: This land use category includes the Downtown Harborfront 1 (DH1) and Downtown Harborfront 2 (DH2) zones. DH1 applies to the Urban Harborfront Shoreline Environment designation to waterfront lots and adjacent harborfront area within the boundaries of downtown. DH2 provides for commercial activities in support of shoreline goals and related office, commercial and residential uses, where the intended scale of development is moderate and an orientation toward the water exists, to provide a transition in scale and character between the waterfront and downtown.

Pike Market Mixed: Provides for less intensive uses than surrounding zoning in keeping with the Pike Place Market Historical District designation.

- Downtown Mixed: This land use category includes the Downtown Retail Core (DRC), Downtown Mixed Commercial (DMC), and Downtown Mixed Residential (DMR) zones. This land use provides a mixed community where housing and associated services and amenities predominate, with the intent that office, retail and other commercial uses are compatibly integrated with the predominant residential characteristics at low to moderate densities. The commercial development is characterized by lower-scale, retail and commercial uses related to activity in the office and retail cores, mixed with housing and associated residential services.

In addition, all lots from the south edge of Pier 54 to the north edge of Pier 59 are within the Historic Character Area (SMC 23.60.704). All development applications that include modification to a designated City Landmark must be referred to the Landmarks Preservation Board and the Seattle Department of Neighborhoods for review and comment prior to permit issuance.

4.1.4 Special Districts

4.1.4.1 Pioneer Square Preservation District

Alaskan Way runs through the Pioneer Square Preservation District from S. King Street to Columbia Street, where specific development policies apply. The Pioneer Square Preservation District was established as both a national and local preservation district in 1970. Pioneer Square is protected by City of Seattle Ordinance 112134. Design guidelines specified in the ordinance focus on preserving its unique historic and architectural character; assuring the sensitive rehabilitation of buildings; promoting development of residential uses for all income levels; and enhancing the district's economic climate for residents, employers, workers, and visitors. More details on the district and the EBSP's effects on the district can be found in the Cultural, Historic and Archaeological Resources Discipline Report (SDOT 2012k).

4.1.4.2 Pike Place Market Historical District

Alaskan Way runs just to the west of the Pike Place Market Historic District in the vicinity of Pike Street. Specific development policies apply in the district. Pike Place Market was established as an historic

district in 1971 and is also on the National Register of Historic Places. The Pike Place Market area is protected by Seattle Ordinance 100475. Design guidelines specified in the ordinance focus on the continued existence and preservation of historical areas and buildings; continued construction and use of buildings for market activities, especially on street levels, and a general harmony as to style, form, color, proportion, texture, material, occupancy and use between existing buildings and new construction. More details on the district and the EBSP's effects on the district can be found in the Cultural, Historic and Archaeological Resources Discipline Report (SDOT 2012k).

4.1.5 Plans and Policies

4.1.5.1 Federal Plans and Policies

4.1.5.1.1 Clean Water Act (Sections 401 and 404) (Pub. L. No. 92-500)

Section 404 of the CWA established a program to regulate the discharge of dredged or fill material into waters of the United States during construction. Activities regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404.

Section 401 addresses state certification that any such discharge during construction would comply with the applicable water quality provisions of the Act.

4.1.5.1.2 Coastal Zone Management Act (Pub. L. No. 109-58)

Under the requirements of the federal Coastal Zone Management Act of 1972 (16 United States Code [USC] 1451-1456), activities of federal agencies that affect coastal zone land uses, water uses, or natural resources must be consistent with a state's CZMA Program. The Washington State CZMA Program includes the Shoreline Management Act, State Environmental Policy Act, Water Pollution Control Act, Clean Air Act, Ocean Resources Management Act, and Energy Facility Site Evaluation Council Act. Ecology reviews projects under this act and ensures that a project complies with state environmental requirements and permits through the laws in the CZMA Program. King County is one of 15 counties in Washington State's coastal zone.

4.1.5.1.3 Rivers and Harbors Appropriation Act of 1899 (Section 10) (33 U.S.C. 403)

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. This section provides that the construction of any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters is unlawful unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army. The Secretary's approval authority has been delegated to the Chief of Engineers.

4.1.5.2 State Plans and Policies

4.1.5.2.1 Aquatic Lands Act

The Washington State Aquatic Lands Act of 1984 (RCW 79.105) provides for the protection and management of state-owned aquatic lands. These aquatic lands include tidelands, shorelines of navigable rivers and lakes, beds of marine and fresh waters, lands in harbor areas and waterways, and some filled aquatic lands. This law indicates that these harbor areas are to be reserved for “landings, wharves, streets, and other conveniences of navigation and commerce.” The DNR acts as a land manager who has the authority to lease or grant easements on aquatic land to tenants on behalf of the owners: the current and future citizens of the State. Public benefits to be considered in determining the use of aquatic lands include encouraging direct public use and access, fostering water-dependent uses, ensuring environmental protection, utilizing renewable resources, and generating revenue in a manner consistent with the other criteria.

4.1.5.2.2 Washington State Shoreline Management Act

The goal of the Washington State Shoreline Management Act is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines" (Ecology 2011). The Shoreline Management Act applies to all marine waters (as well as many rivers, lakes, streams and wetlands) of the state and upland areas that extend 200 feet landward from the edge of these waters.

The Shoreline Management Act focuses on three policy areas: shoreline use, environmental protection and public access. The Act “emphasizes accommodation of appropriate uses that require a shoreline location, protection of shoreline environmental resources and protection of the public's right to access and use the shorelines” (RCW 90.58.020). The Shoreline Management Act established the concept of priority shoreline uses. These preferred uses include “single family residences, ports, shoreline recreational uses, water dependent industrial and commercial developments and other developments that provide public access opportunities.” Under environmental protection, the Shoreline Management Act focuses on the protection of shoreline natural resources including “...the land and its vegetation and wildlife, and the water of the state and their aquatic life...” against adverse effects. Finally, under “public access,” the Shoreline Management Act stresses that the Shoreline Management Plans make “provisions for public access to publicly owned areas, and a recreational element for the preservation and enlargement of recreational opportunities” (Ecology 2011).

4.1.5.2.3 Washington State Hydraulic Code (Chapter 77.55 RCW)

The State Hydraulic Code requires that any construction activity that will “use, divert, obstruct, or change the natural flow or bed of state waters” must obtain a Hydraulic Project Approval (HPA) permit and comply with the terms of that permit. State waters include all marine and fresh waters of the state, except those that are entirely artificial. Elliott Bay is a regulated state water under this code. The permit is issued by Washington Department of Fish and Wildlife.

4.1.5.3 Regional and Local Plans and Policies

4.1.5.3.1 Puget Sound Regional Council VISION 2040 and Transportation 2040

VISION 2040 presents the Central Puget Sound Region's growth management, economic and transportation strategy. Within this overall plan, Transportation 2040 represents the Metropolitan Transportation Plan for the region. The 2008 update to VISION 2040 contains policies and guidelines for implementation of local comprehensive plans and development regulations within central Puget Sound, including King, Kitsap, Pierce and Snohomish counties. The plan identifies long-range growth and transportation strategies to fulfill the vision of economically diverse and environmentally healthy communities. By integrating land use and transportation planning, the plan provides a framework for allowing regional growth while maintaining open space, resource lands, and an efficient transportation system with travel mode options.

Transportation 2040, adopted in 2010, established policies that are intended to improve regional mobility and access and address the region's long-range transportation needs arising from regional growth. It defines five major objectives:

- Support maintenance and preservation of existing transportation infrastructure and services as a high priority;
- Provide stronger links between the transportation system and land use development to encourage growth within defined UGAs with balanced investments in multimodal transportation improvements;
- Identify and prioritize projects, programs, and policies to improve all modes of transportation and keep up with growth;
- Improve the region's financial capacity to fund needed improvements; and
- Tailor recommendations at the sub-regional and corridor levels, in recognition of the region's social, physical, and cultural diversity.

Transportation 2040 identifies regionally important components of the area's Metropolitan Transportation System and includes a complete list of projects and transportation system improvements.

4.1.5.3.2 Seattle Comprehensive Plan

The Seattle Comprehensive Plan (2007) includes goals and policies to guide growth and development over a 20-year period. In 2004, the City adopted a series of amendments to meet the GMA requirement for a 10-year review of the Plan. This update included extending the horizon year of the Plan from 2014 to 2024 and adopted new growth targets based on revised population forecasts provided by the State. The current Comprehensive Plan contains all amendments adopted by City Council through 2011, including selected goals and policies of 38 neighborhood plans. Consistent with GMA requirements, the City's Comprehensive Plan contains the following elements:

- Urban Village Element,
- Land Use Element,

- Transportation Element,
- Housing Element,
- Capital Facilities Element,
- Utilities Element,
- Economic Development Element,
- Neighborhood Planning Element,
- Human Development Element,
- Cultural Resource Element, and
- Environment Element.

The City's Comprehensive Plan includes an urban village strategy. This strategy includes land use, transportation, and housing goals that, in combination, are intended to provide for affordable housing and facility improvements for higher-density neighborhoods. The City is beginning a seven year major update to the Comprehensive Plan required by the GMA. This will likely culminate in City Council action on a bill in the first half of 2015, although City Council may take action on parts of the plan during the annual amendment process in 2013 or 2014. The update will focus on three specific areas: sustainability, climate change and incorporating recent population forecasts and growth targets in the plan.

4.1.5.3.3 Seattle Neighborhoods Plans

As part of the Comprehensive Plan effort, the City directed each neighborhood to create community visions, address geographically-specific problems and opportunities, and produce plans for implementing the Comprehensive Plan growth targets (City of Seattle 1999). Key policies from each plan are incorporated into the overall Seattle Comprehensive Plan to provide specific direction and strategies that guide development activities within individual neighborhoods. Figure 4-1 (presented earlier in this chapter) shows the location of each neighborhood in relation to the Seattle waterfront and the Alaskan Way right-of-way. The following sections describe the neighborhood plans for three specific neighborhoods in the study area.

4.1.5.3.4 Downtown Urban Center Neighborhood Plan (DUCNP)

This overarching Urban Village Plan, adopted in 1999, addresses downtown-wide issues and provides a framework for the plans and policies of the downtown urban village neighborhoods including the Commercial Core, Belltown and Pioneer Square. The EBSP is located in these three neighborhoods. The DUCNP's framework goals address economic development, urban form, and shoreline and transportation elements, among others.

4.1.5.3.5 Pioneer Square Neighborhood Plan

The Pioneer Square neighborhood lies within the EBSP study area between S. Washington and Columbia Streets. The current Pioneer Square Neighborhood Plan was adopted in 1998. Key objectives associated with the waterfront in the current Pioneer Square Neighborhood Plan include the following:

- Connect Pioneer Square with the waterfront by creating destinations that attract people to the southern waterfront.
- Weave the east–west Pioneer Square streets to the waterfront by strengthening the pedestrian connections under the AWW. Use connections at street level to minimize the barrier effect.
- Revive the S. Washington Street Boat Landing and restore it to its position as the centerpiece of the south waterfront. This historic pier is the key relic that connects Pioneer Square and Seattle to its waterfront history.
- Redesign waterfront parks to allow better access to the water, provide facilities for recreation, and provide places to experience the unique port activity. This is a productive urban waterfront that public space design should celebrate.

4.1.5.3.6 Commercial Core Neighborhood Plan

The Alaskan Way right-of-way runs through Seattle’s Commercial Core from Columbia Street north to Bell Street and the EBSP is located within the Commercial Core north of Columbia Street. The Commercial Core Neighborhood Plan, adopted in 1999, contains goals and policies for the Commercial Core, the City’s largest and most developed downtown neighborhood. The Commercial Core encompasses Seattle’s downtown retail core; financial center/office core; City, County and federal government offices; the central waterfront area; and Pike Place Market Historic District. The Commercial Core Plan presents the area’s goals and policies for implementing the overall Seattle Comprehensive Plan goal to concentrate future growth in urban centers throughout the city. The two goals of the Commercial Core are to:

- Create a major center for employment, tourism and conventions, shopping, and residential neighborhoods resulting in a regional hub of cultural and entertainment activities; and
- Promote a unique neighborhood identity for the Commercial Core.

Examples of policies included in the plan are as follows:

- Strive to maintain the neighborhood’s historic, cultural and visual resources;
- Guide development and capital projects throughout the entire downtown area through development of a unified urban design strategy that provides a vision for new public facilities, waterfront connections, pedestrian environments, transit linkages, and open spaces;
- Strive to take advantage of opportunities to develop new public open space and encourage development of a system of connected green spaces and open areas;
- Use Green Streets and open space as a means to improve urban design character and provide amenities that support growth; and
- Seek to improve the pedestrian qualities of streets and public spaces.

4.1.5.3.7 Belltown Neighborhood Plan

The northernmost portion of the EBSP runs through the Belltown (Denny Regrade) neighborhood. Belltown is the northern neighborhood of downtown Seattle bounded by Denny Way to the north,

Elliott Bay to the west, Sixth Avenue to the east, and Virginia/Stewart Streets to the south. Belltown is an eclectic and diverse neighborhood. It is Seattle's densest residential community and is an arts center, shopping and dining destination, and home to a wide variety of businesses. This diversity shapes the neighborhood's unique social and cultural fabric. It is also reflected in the built environment through its architecture, public art, and other street amenities.

A key objective in the current Belltown Neighborhood Plan is described below.

- **Green Street & Open Space Connection Strategy:** combines a series of actions that would provide parks and open space opportunities for Belltown residents without a significant expenditure of public funds for land acquisition. The strategy seeks to improve Green Streets within the community and to improve and enhance connections to Open Spaces both inside and outside the neighborhood, most notably the waterfront and the Seattle Center.

4.1.5.3.8 Seattle Central Waterfront Concept Plan

The *Mayor's Recommendations: Seattle's Central Waterfront Concept Plan* was issued in June 2006. The Concept Plan was initiated in 2003 to recognize the opportunity created by the removal of the AWW. This Concept Plan, guided by Framework Principles adopted by City Council in 2004, provides an overview of the history of planning along the waterfront, existing conditions, and conceptual plans and policies for the waterfront area roughly encompassing the corridor between the Elliott Bay shoreline and First Avenue, extending from Myrtle Edwards Park on the north to S. Atlantic Street on the south. The Concept Plan includes preliminary recommendations for new parks and open spaces, shoreline and habitat improvements, improved linkages to downtown, transit connections, land use changes, and regulatory changes.

In 2012, the City Council gave its support to the Concept Design and Framework Plan for Seattle's Central Waterfront (Central Waterfront Committee 2012a), which proposes a series of core projects along the waterfront, including the Historic Pier Walk, Union Street Pier, the Aquarium Plaza, and Pier 62/63 rehabilitation. The EBSP forms the foundation of all the work along the waterfront.

4.1.5.3.9 Guiding Principles – Central Waterfront Project

In December 2010, City Council approved Resolution 31264 establishing a Central Waterfront Committee, including Guiding Principles related to the Central Waterfront Project (now called Waterfront Seattle). The seven principles are:

- Create a waterfront for all;
- Put the shoreline and innovative, sustainable design at the forefront;
- Reconnect the city to its waterfront;
- Embrace and celebrate Seattle's past, present and future;
- Improve access and mobility;
- Create a bold vision that is adaptable over time; and
- Develop consistent leadership from concept to construction to operations.

The City is undertaking a new effort related to the future of the Seattle downtown waterfront: “Waterfront Seattle.” This effort is expected to evolve over the next several years and would take into account the replacement of the Elliott Bay Seawall.

4.1.5.3.10 City of Seattle Department of Transportation Action Agenda

The Transportation Action Agenda for 2012 (SDOT 2012i) includes a number of specific policies and actions, to be carried out over the next two years, to provide mobility, and access to homes, jobs, education, and services. The EBSP is a key component of the Action Agenda.

4.1.5.3.11 Seattle Transportation Strategic Plan

Adopted in 2005, the Transportation Strategic Plan describes the actions that SDOT plans on taking to accomplish the transportation-related goals and policies of the City’s Comprehensive Plan. The update focuses on four priorities: (1) moving goods and people around the region efficiently; (2) ensuring transportation routes are available during a catastrophe and ensuring emergency access on roads and bridges; (3) providing access so that people can get to jobs and goods can get to market; and (4) enhancing, not detracting, from the quality of life.

One of the key themes of the Seattle Transportation Strategic Plan is the preservation and maintenance of transportation infrastructure. The Elliott Bay Seawall is identified in the plan because it provides support for the Alaskan Way surface street, the BNSF mainline tracks and the pedestrian/bicycle path.

4.1.5.3.12 City of Seattle Bicycle Master Plan

The Bicycle Master Plan, adopted in 2007, is a planning document that would be used to guide future improvements to Seattle’s bicycle network. The focus for the master plan is on the evaluation of arterial streets for the implementation of bicycle facilities and to encourage more bicycling throughout the City. Specific elements of the Plan in the study area include:

- Install bicycle lanes on Alaskan Way in Downtown Seattle (when Alaskan Way is reconstructed); and
- Provide bicycle access to and from the ferry when the Colman Dock Ferry Terminal is reconstructed.

The plan is in the process of being updated. A major bicycle/pedestrian route runs along the waterfront.

4.1.5.3.13 Seattle Pedestrian Master Plan

Completed in 2009, the Pedestrian Master Plan is a tool to coordinate resources and provide information about pedestrian-related projects, pedestrian concerns, neighborhood resources, and important tools to get more people walking in Seattle. The goals of the web-based plan include reducing the number and severity of accidents involving pedestrians, equitable distribution of services throughout the City, developing a pedestrian environment that supports a vibrant economy, and raising awareness of the health benefits of walking. High-priority implementation projects in the EBSP area include intersection improvements at Columbia, Madison, and Union Streets (listed as Tier 1 or highest

priority); and Spring, Seneca, Lenora, and Blanchard Streets (list as Tier 2 or next highest priority). High-priority sidewalk and pedestrian path improvements from the plan include Alaskan Way between S. Washington Street and Yesler Way, from Spring to Stewart Streets, and from Clay to Broad Streets. High-priority east-west pedestrian improvements include Columbia, Seneca, and Union Streets from Alaskan Way east to First Avenue.

4.1.5.3.14 Seattle Transit Master Plan

Adopted in April 2012, the Seattle Transit Master Plan calls for continued implementation of priority bus corridors, developing Center City transit to support downtown growth and development, enhancing walk-bike-ride access in areas of greatest need, and improving transit information and system usability. The Seattle Ferry Terminal (Colman Dock) is a designated transit hub in the plan. The plan envisions a Bus Rapid Transit route on Marion and Madison Streets that would link Colman Dock with Madison Park via First Hill.

4.1.5.3.15 City of Seattle Center City Access Strategy

The Center City Access Strategy is an ongoing City effort focused on growing the local economy, building transportation solutions and fostering great neighborhoods in and around the urban core from Chinatown/International District and Pioneer Square to South Lake Union and Capitol Hill. Elements of the strategy include creating a livable and walkable Center City, integrating and simplifying the transit system, accommodating anticipated growth, maintaining access into downtown during major construction projects and continuing mobility into the future.

4.1.5.3.16 City of Seattle Center City Circulation Study

The Center City Circulation Report, issued in 2003, was developed in response to a series of major transit and roadway projects planned in downtown Seattle over the following ten years, including the EBSP (then as a component of the AWV Project). The goal of the study is to provide a clear conceptual plan for improving and better integrating downtown Seattle's public transit and non-motorized transportation system, synthesize existing policy and plans, present gaps and opportunities for improved transit and non-motorized service and provide a multi-modal, system-wide blueprint for future work.

4.1.5.3.17 Seattle Shoreline Master Program

The Shoreline Master Program (SMC Chapter 23.60) includes the goals, policies and regulations concerning land use and activities within the City's Shoreline District. The District includes Puget Sound (Elliott Bay) and all land within 200 feet of the ordinary high water mark. The Shoreline Master Program established three major policy goals as required by the State Shoreline Management Act: Preferred Shoreline Uses, Environmental Protection and Public Access. The policies establish a preference for water-oriented uses that are appropriate for the environmental context; requires protection for shoreline natural resources to ensure no net loss of ecological function, and promotes public access to shorelines. The Shoreline Master Program is in the process of being updated to be consistent with Chapter 173-26 WAC, Part III. Proposed amendments to the Shoreline Code were issued for public review in February 2011, a second draft was completed in December 2011, and final recommendations

were issued in June 2012. Approval by City Council expected late in 2012, followed by review and approval by Ecology.

The Shoreline Master Program defines shoreline environments. In these areas, special development standards must be met in addition to standard zoning requirements in the Seattle Land Use Code (SMC Title 23). The additional requirements establish the types of land uses permitted within the shoreline areas. The shoreline from S. Jackson Street north along the entire length of the seawall is designated as Urban Harborfront (see Figure 4-2).

The purpose of the Urban Harborfront shoreline environment is to encourage economically viable, water-dependent uses to meet the needs of waterborne commerce, facilitate the revitalization of downtown Seattle's waterfront, provide opportunities for public access and recreational enjoyment of the shoreline, preserve and enhance elements of historic and cultural significance, and preserve views of Elliott Bay and the land forms beyond.

4.1.5.3.18 Environmentally Critical Areas

The City's Environmentally Critical Areas Ordinance (SMC Chapter 25.09) regulates development affecting landslide-prone areas, steep slopes, potential seismic liquefaction zones, abandoned landfills, flood-prone areas, wetlands, riparian corridors, shoreline habitat and other fish and wildlife habitat conservation areas, and Environmentally Critical Area buffers.

The shoreline area along Alaskan Way has been mapped as a potential seismic liquefaction zone (much of the shoreline is underlain by old fill material that is potentially unstable during earthquakes). Critical area maps also identify several steep slopes scattered near the waterfront. Steep slopes may be subject to slide conditions if overburdened by extensive development. See the Geology and Soils Discipline Report (SDOT 2012I) for additional information.

SMC Section 25.09.060 provides general development standards that apply to all development containing Environmentally Critical Areas or their buffers. These standards include requirements for minimizing clearing and grading, implementing Best Management Practices (BMPs) for development within these critical areas, and requiring additional engineering studies, third party review of geotechnical reports, bonding and insurance. Additional development standards specific to landslide-prone critical areas are provided in SMC 25.09.080, development standards specific to liquefaction-prone areas are provided in SMC 25.09.100, and standards specific to steep slope areas are provided in SMC 25.09.180. Development in an Environmentally Critical Area requires preparation of a surveyed site plan and submittal of additional information relating to critical areas and their buffers as part of the application and review process.

Much of the seawall is located within a liquefaction zone. The general development standards for Environmentally Critical Areas set out in SMC 25.09.060 do not apply to liquefaction-prone areas. Instead, specific standards for liquefaction-prone areas are contained in SMC 25.09.100 that allow the city to require soils engineering studies to determine the physical properties of the surficial soils, especially the thickness of unconsolidated deposits and their liquefaction potential, as set out in the 2003 International Building Code. The City may also impose mitigation requirements (for building within these zones) pursuant to the Building Code.

The project is also located within a Shoreline Habitat Environmentally Critical Area, with development standards required by SMC 25.09.60. Both the Critical Areas Ordinance and the Shoreline Management Act apply in the current code. The shoreline permit would ensure that the critical areas development standards and applicable BMPs are also met.

In some cases the director of the DPD may allow exemptions or modifications to the Environmentally Critical Area regulations. If an Environmentally Critical Area exemption is granted, the development is relieved of all the provisions of the ECA chapter, except for those standards specified in the exemption section of the code. As mentioned above, these standards include limits on development, conditions on development, and the use of BMPs. Examples of types of development that may be exempted include the following:

- Work directly related to ending a condition that (1) is an immediate threat to the public health, safety, and welfare or creates an immediate risk of damage to public or private property, and (2) requires remedial or preventive action in a timeframe to allow compliance with the applicable provisions of the critical areas regulations.
- Maintenance, repair, renovation, or structural alteration of an existing structure that does not increase the impact to or encroach further within, or further alter an environmentally critical area or buffer. Or, if a public project, the intrusion into the environmentally critical area benefits the public and would be located and designed to keep environmental disturbance to a minimum.
- Rebuilding or replacing structures that are deteriorated or destroyed by an act of nature.

Early consultation with DPD is underway to determine if the proposal to replace the seawall is likely to be exempt from the Environmentally Critical Area regulations. Consultation with City staff on the proposed design of the replacement project and type of construction techniques are underway to ensure compliance with applicable development standards.

4.1.5.3.19 Port of Seattle Shoreline Plan

The Seaport Shoreline Plan, issued in 2007, provides the City, other agencies and the public the Port of Seattle's perspective concerning their operations and facilities that may be affected by the shoreline management goals and requirements. "It identifies existing and appropriate future sites for port facilities and development, habitat mitigation and public access at each of the Port's shoreline properties." The Port of Seattle has several facilities in or adjacent to the project area, including Terminal 46 (just south of the project area), Pier 66 and Pier 69.

4.2 PARKS AND RECREATION

4.2.1 Parks and Recreation Facilities

Seattle's Parks and Recreation 2006 Development Plan describes the City's park and recreational system, comprised of open space, parks, boulevards and trails, beaches, lakes and creeks, recreational, cultural, environmental, and educational facilities, a broad variety of programs and people. The system is diverse and woven into the fabric of Seattle's neighborhoods. The Plan emphasizes that planning for

parks and recreation in Seattle must be sensitive to the stresses and complexities of urban life, flexible to the changing urban conditions, and be a part of the City's overall growth strategy. It must be focused on conservation of the natural environment and meld recreation programs with human and family services. Above all, planning for parks and recreation must reflect a vision consistent with the goals and aspirations of the community.

Shoreline access is also recognized as providing open space functions: a variety of shoreline access facilities have been required by conditions of Shoreline Management Substantial Development Permits, and other city permits and approvals. In addition, many of the piers along the shoreline are located within publicly owned aquatic lands between the Inner and Outer Harbor Lines. The DNR, as trustee for those lands, encourages public use and access in management decisions, consistent with RCW 79.90.450 and 455 and has included public access requirements in some aquatic land leases (FHWA et al. 2004).

The seawall stretches along the Seattle waterfront from S. Washington Street on the south to Broad Street on the north. Between Broad and Bay Streets, the seawall has been seismically buttressed as part of the recently constructed Olympic Sculpture Park, which is not included in the current EBSP study area. The park, recreational facilities, and public art described below are located primarily within the Alaskan Way right-of-way or on abutting property. Figure 4-5 shows the locations of parks and recreational and public access facilities found along Alaskan Way.

Seattle Parks and Recreation and Port of Seattle own most park and/or public access sites. In some instances, however, facilities consist of public access rights over private property. A variety of shoreline access facilities have been required by conditions of Shoreline Management Substantial Development Permits and other City permits and approvals, as well as aquatic lands leases.

A description of specific parks and recreation facilities follows, starting from facilities located at the south end of the study area and proceeding to the north end.

4.2.1.1 Waterfront Bicycle and Pedestrian Path

This multipurpose asphalt pathway extends from S. Royal Brougham Way on the south to Broad Street on the north where it connects to the Elliott Bay Trail and is an integral component of the City's transportation system. The path is also part of the Seattle Urban Trails System designated to facilitate walking and bicycling as viable transportation choices, provide recreational opportunities, and link major parks and open spaces with Seattle neighborhoods. The asphalt trail carries considerably lower pedestrian volumes than the promenade on the west side of the Alaskan Way surface street. Additional discussion of this path can be found in the Transportation Discipline Report (SDOT 2012e).

4.2.1.2 Waterfront Promenade

The Waterfront Promenade is the sidewalk between the face of the seawall and the west side of the Alaskan Way surface street that extends from S. Washington Street to Myrtle Edwards Park. The promenade is the one element that ties the City's central waterfront into a linear corridor where a variety of uses are accommodated. The promenade provides space for the interaction of private and public activities that make the waterfront an attractive destination.

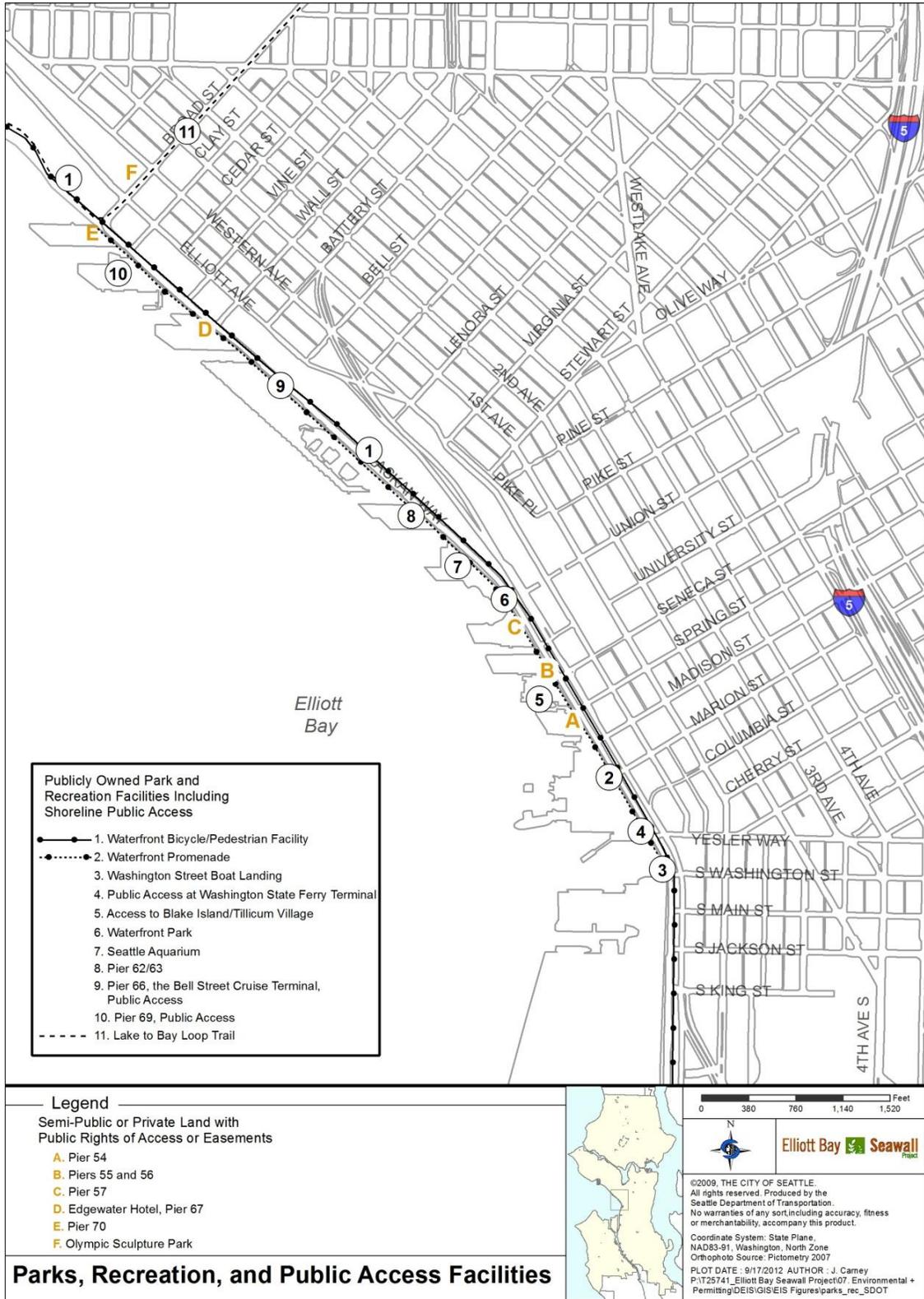


Figure 4-5. Parks, Recreation, and Public Access Facilities in the Elliott Bay Seawall Project Study Area

Of particular interest to many promenade users are the near and distant views of Puget Sound and water-related uses, including ferries, shipping, and recreational watercraft. The interrelated functions of the promenade including pedestrian movement, access to private uses such as retail and restaurants, access to public open space, and enjoyment of activities such as walking and viewing. The high density of pedestrians and a variety of activities provides opportunity for people watching and enjoyment of the general ambience and setting along the busy waterfront.

In most places the promenade is 20 feet wide. Between S. Washington Street and Yesler Way, open water areas and views of Elliott Bay and distant natural features such as the Olympic Mountains are readily visible on clear days, but the uses adjacent to the promenade attract less visual interest. From Yesler Way to Madison Street, Washington State Ferries' Colman Dock Ferry Terminal blocks near views of the water and distant views are blocked by ferry loading facilities and the Colman Dock building. Between Piers 54 and 59, the waterside is bounded by a variety of historic piers, many of which contain public access areas. Design continuity is provided on the waterside (west side) of the promenade by a concrete railing (where not abutted by piers).

4.2.1.3 Washington Street Public Boat Landing

The Washington Street Public Boat Landing is located on public right-of-way at the end of S. Washington Street on the west side of Alaskan Way. The pergola was constructed in the 1920s as the headquarters for the now defunct Seattle Harbor Department. The pergola is a City-designated historic structure and is on the National Register of Historic Places. This facility is located within the City's Pioneer Square Preservation District. Over the years, this building has fulfilled a number of other uses, including: a landing for ferries and oceangoing ships, and as the United States Navy's official shore-leave landing and departure point. The pergola is approximately 86 feet long and 30 feet wide. The facility has provided some seating and views of the water and mountains to the west. It should also be noted that the gangway and boat moorage/docking floats were removed in the 1990s.

A historic plaque is located at the pergola commemorating the wreckage of the steamer Idaho, which served between 1900 and 1909 as a mission hospital where Dr. Alexander De Soto ministered to the needs of seafarers and the destitute. Additional information on this facility can be found in the EBSP Cultural, Historical and Archaeological Resources Discipline Report (SDOT 2012k). The Pioneer Square Neighborhood Plan calls for the rehabilitation and reuse of Washington Street Boat Landing, either as an entry for new "mosquito fleet" passenger ferries or as part of a new public space (FHWA et al. 2006).

4.2.1.4 Colman Dock Ferry Terminal – Pier 52 (Shoreline Public Access)

The Colman Dock Ferry Terminal provides public access and shoreline viewing areas that are shared by pedestrians accessing the ferries. Existing designated public access areas include the south side of Pier 50 passenger ferry terminal walkway, an open space area along the promenade near Yesler Way, and Alaskan Way along the upper level deck of the terminal. The area along the street near Yesler Way provides benches and a fountain. It is bounded by Alaskan Way on one side and a large expanse designated for auto queuing on the other side, creating little or no view of the water, mountains, or other areas of interest.

The area of Colman Dock accessible without paying a ferry fare has limited visual interest and limited views of the waterfront. These areas also provide pedestrian access to ferries and therefore provide limited opportunities for lingering to enjoy views during peak commute hours. An interior public information area is provided in the ferry waiting room (FHWA et al. 2004). Some facts about the Ferry Terminal include:

4.2.1.5 Fire Station No. 5 (Shoreline Public Access)

Fire Station No. 5 includes a dock for the City's fireboats. The fire station is located on City right-of-way at the foot of Madison Street on the west side of Alaskan Way, and it provides a small public access area for harbor viewing located just north of the station building. The primary elements of visual interest are the fireboats moored at the fire station and ferries leaving Colman Dock Ferry Terminal to the south (FHWA et al. 2004).

4.2.1.6 Pier 54 (Shoreline Public Access)

Pier 54 is a private pier at the foot of Madison Street that provides a small public plaza area immediately north of Fire Station No. 5. The public plaza features a public art installation called *Ivar Feeding the Gulls*. There is also a public access area along the south side of the pier transit shed within the Madison Street right-of-way. This public access area is required as a condition of a right-of-way use permit (Seattle Street Use Permit 04.25.83) (FHWA et al. 2004).

4.2.1.7 Pier 55 (Public Access to Blake Island/Tillicum Village)

Access to Blake Island State Park is provided by regular private boat service from Pier 55. Blake Island is located in Puget Sound about five miles from the Seattle waterfront. Blake Island State Park is 475 acres in size, with five miles of saltwater beach shoreline. It provides 15 miles of day use trails, 51 individual campsites, and a group camping area in addition to Tillicum Village. The park is reachable only by private tour boat or private recreational boat. Tillicum Village has been located on the island since the establishment of the park in 1974 and is a concessionaire of Washington State Parks. Tillicum Village provides a Pacific Northwest Native American style dinner and interpretive program based on legends of various Northwest Coast tribes. The recreational and interpretive services provided by the concessionaire are considered by State Parks to constitute public services necessary or appropriate for the public use and enjoyment of the park.

More than 95 percent of the Tillicum Village visitors use Argosy Cruise Line for access. Argosy carried approximately 50,000 persons to Blake Island in 2010 and estimates that 99 percent of the persons it carries are attending events at Tillicum Village (Kevin Clark, Argosy Cruise Line, personal communication, March 25, 2011). With a new show, they anticipate carrying up to 70,000 in 2011. Blake Island State Park had an estimated 116,000 visitors in 2010. Overnight boaters total 16,700 and overnight campers total 3,600. Park attendance has ranged from 101,000 to over 174,000 since 2006 (David Roe, Washington State Parks, personal communication, March 29, 2011).

4.2.1.8 Piers 55 and 56 (Shoreline Public Access)

Piers 55 and 56 are privately-owned at the foot of Seneca Street and provide 29,259 square feet of public access on a deck area between the two piers and along the south and west sides of the transit shed on Pier 56. These public access areas are required as a condition of shoreline permit approval and the DNR outer harbor aquatic lease (Seattle Department of Design, Construction and Land Use [DCLU], Permit 9703373).

Benches for public seating are provided adjacent to the promenade along Alaskan Way and at the end of Pier 56.

4.2.1.9 Pier 57 (Shoreline Public Access)

Pier 57 is a privately-owned pier located just north of University Street housing restaurants, retail and recreational uses in the transit shed called Miner's Landing. There is a deck area on the south side of the transit shed that provides outdoor restaurant seating and public access. A portion of the walkway on the north side of the transit shed is part of the City's Waterfront Park. The Seattle Great Wheel, a privately-owned and operated Ferris-wheel type attraction, opened in the summer of 2012 and is located at the west end of the pier. A public access area is provided at the end of the pier in accordance with the provisions of the DNR outer harbor aquatic lease (FHWA et al. 2004).

4.2.1.10 Waterfront Park

The City's Waterfront Park extends from the north apron of Pier 57 up to the apron of Pier 59, including the area where Pier 58 was once located. The deck area between Piers 57 and 59 provides an overwater plaza with shoreline viewing and congregating areas, fishing areas, seating, and picnicking areas. Two public art installations are located in the park: a Christopher Columbus statue and a waterfront fountain.

Three plaques in Waterfront Park commemorate historic events:

1. The 'S.S. Portland' plaque describes the July 1897 arrival of the S.S. Portland at Schwabacher's Wharf carrying the "ton of gold" that started the stampede to the Klondike.
2. The 'Miike Maru' plaque noting the arrival of the Miike Maru in 1896 with a cargo of tea heralding the first regular shipping service from the Far East and the birth of Seattle as an international port.
3. The 'Joshua Green Memorial Plaque' noting the establishment of the Puget Sound Navigation Company, which operated steamboats and automobile ferries by Joshua Green.

Public use of the park is primarily from foot traffic, as well as being tied to the surrounding attractions like the Seattle Aquarium. Seattle Parks and Recreation has been working on plans for the waterfront park in the context of larger redevelopment plans on the waterfront such as the viaduct and seawall. There is also a need to address the safety deficiencies and structural deficiencies with the current facility.

4.2.1.11 Pier 59 and Seattle Aquarium

Public access on Pier 59 is provided along a portion of the south and north sides of the Seattle Aquarium. The public deck area provides shoreline viewing and congregating areas. Pier 59 originally served as a terminal for the Northwestern Steamship Dock Company, and later for Dodwell & Co. First referred to as Pier 8, the structure was renumbered to Pier 59 in the 1940s. The building was purchased by the City, and, with the adjacent concrete exhibit building (Pier 60), was renovated to house the Seattle Aquarium, which opened in 1977.

The Seattle Aquarium fronts directly on the Alaskan Way surface street with a new main entrance at Pier 59. Remodeling of the Seattle Aquarium at Pier 59 was completed in 2007. Seattle Parks and Recreation restored structural integrity to the majority of the facility by installing new driven and posted piles and new concrete aprons (to replace existing wooden ones). The purpose of the Seattle Aquarium program is “inspiring conservation of our marine environment.” The Seattle Aquarium is open daily and serves more than 700,000 visitors annually, of which more than 40,000 are school children. Seattle Parks and Recreation and the Seattle Aquarium Society were in the process of long-term planning that addressed a number of options, including a future, expanded aquarium that would require removal of the existing Waterfront Park (south of Pier 59 and Pier 60). One option called for a new waterfront park in place of Piers 62/63. However, a more modest remodel plan involving two new exhibits and a new Alaskan Way entrance was adopted. The Seattle Aquarium Society is working on the next several phases of significant renovations and/or expansions to the existing facility. Major factors influencing the success of the Seattle Aquarium in attracting visitors include the following:

- Visibility to the public, supportive land uses, and strong connections to the water, provided by the location on the waterfront;
- Physical accessibility, especially with respect to the proximity of visitor parking. This is an especially important factor for the Seattle Aquarium, since it is separated from the Pike Place Market, retail core, and other upland areas by a steep hillside;
- A critical mass of attractions in the area, which is provided by proximity to major pedestrian attractions such as the Pike Place Market and nearby Pioneer Square, as well as Colman Dock Ferry Terminal and waterfront commercial attractions; and
- A strong thematic focus and the depth of visitor experience.

The aquarium is a vital facility that provides an involving visit or experience with a solid thematic focus. The Seattle Aquarium, at 68,000 square feet, is smaller than other major aquariums, and this restricts to some degree the extent of the visitor experience. This may be more significant in attracting tourist visitors than local visitors (FHWA et al. 2006).

4.2.1.12 Pier 62/63

Pier 62/63 Park is owned by Seattle Parks and Recreation and consists of a large deck with views of the water, Olympic Mountains and downtown skyline. Piers 62/63 comprise a flat, 77,000-square-foot wooden deck on creosote-treated timber pilings. The piers were constructed in the 1920s as two separate general cargo piers with large warehouses covering the central portion of the piers, leaving a 16-foot-wide apron around the perimeter for rail service and warehouse access. The warehouse

structures were demolished in the 1980s. The piers' long history of commerce, labor, and trade changed in 1989 when they were purchased by the City for a new waterfront public open space.

From 1991 through 2004, Pier 62/63 Park was used for a series of 18 to 20 concerts during summer evenings. In 2005, the summer concert series was relocated to South Lake Union Park due to structural problems with the pier. Future plans include rebuilding the piers and possible barge pool as outlined in the Strategic Plan for Realizing the Waterfront Seattle Vision (Central Waterfront Committee 2012b). Passive public uses like walking, fishing, and picnicking are still permitted on portions of the piers despite their condition. In general, casual use is not encouraged due to the deck's expansiveness and lack of amenities.

Seattle Parks and Recreation has been considering options for replacement of Piers 62/63 and upgrades and improvements to Waterfront Park. Structural concerns at both Piers 62/63 and Waterfront Park have prompted this analysis. Improvements to both Piers 62/63 and Waterfront Park are components of the Concept Design and Framework Plan for Seattle's Central Waterfront (Central Waterfront Committee 2012a), supported by City Council in August 2012 (City Council Resolution 31399).

4.2.1.13 Pier 66 (Shoreline Public Access)

The Port of Seattle's Pier 66 Bell Street Terminal is an 11-acre facility containing outdoor plazas, restaurants, 57,000-square-foot conference center, pleasure craft marina and cruise terminal. The Bell Street Pier Cruise Terminal is the homeport for Norwegian Cruise Line and Celebrity Cruises. In 2012, the cruise terminal had 58 scheduled vessel calls from May through September. Guest moorage is available year-round for up to 80 recreational vessels in slips ranging from 25 to 120 feet.

Public access facilities include a roof deck and street level plaza area. The roof deck provides panoramic views and seating facilities. A bridge connection across the Alaskan Way surface street to Elliott Avenue is provided at the roof level on the alignment of Bell Street. On the street level, public plaza areas are provided between the conference center and the marina. Public facilities include view areas, seating and art features required by shoreline permits (Seattle DCLU, Application 9203932).

Pedestrian volumes are very high when cruise ships load and unload at the pier and are moderate at other times. Two public art installations are located at Pier 66: the *Light Tower* by Ron Fisher is located on the tip of the breakwater at the entrance to the marina, and a mosaic wall entitled *Danza del Cerchio* was created in 1996 by Ann Gardner on commission from the Port of Seattle (FHWA et al. 2004).

4.2.1.14 Edgewater Hotel (Shoreline Public Access)

Constructed in 1962, the Edgewater Hotel located on Pier 67 is a four-story structure containing 223 guestrooms, a restaurant, and 10,000 square feet of meeting and conference space. A public waterfront viewing area is located along the north side of the parking area as a condition of its shoreline permit (Seattle DCLU, Application 8802084) (FHWA et al. 2004).

4.2.1.15 Pier 69 (Shoreline Public Access)

The Port of Seattle headquarters are located on Pier 69. The historic three-story building was refurbished in 1993 and houses the Port Commission, Commission Chambers, Executive, Legal, Seaport,

and other Port support services. First-floor tenants include a café and the Victoria Clipper, a high-speed Seattle-to-Victoria, B.C. passenger-only ferry.

Public access areas are located along the north and west sides for views and public fishing. Public access is a condition of the shoreline permits (Seattle DCLU, Applications 9007326, 8301578) and DNR lease conditions for public aquatic land (FHWA et al. 2004).

4.2.1.16 Pier 70 (Shoreline Public Access)

Built in 1902, Pier 70 is a privately-owned pier housing a variety of businesses and providing public access areas along the south, north, and west sides required as a condition of the shoreline permit and DNR lease conditions for public aquatic lands (FHWA et al. 2004).

4.2.1.17 Olympic Sculpture Park

The Seattle Art Museum's Olympic Sculpture Park opened in January 2007. This new park transformed a former industrial property into a nine-acre green space for art at the north end of the seawall. Olympic Sculpture Park was developed by the Seattle Art Museum in partnership with the City. Approximately one-third of the site is made up of City-owned parcels and rights-of-way. Olympic Sculpture Park is open to the public free of charge.

The park is bounded by the seawall on the west, Western Avenue on the east, Broad Street on the south, and Bay Street on the north. It encompasses approximately four city blocks and a portion of the Alaskan Way right-of-way between the BNSF railroad and the seawall. The design of the park is based on its location along and above the waterfront. It has views of Puget Sound and the Olympic Mountains to the west and of the waterfront and downtown Seattle to the south. The design provides features and areas for people to sit and enjoy views. At the east side of the park is a 7,000-square-foot glass and steel pavilion that houses special events, temporary exhibitions, public programs, and a café. In addition to classic, modern, and contemporary permanent sculptures, the park hosts temporary installations and draws people together for art-related musical and theater performances, as well as year-round educational programs.

As part of the Olympic Sculpture Park project, the northern end of the seawall was stabilized with the placement of new rock riprap to form a seismic buttress in front of the seawall face between Bay and Broad streets. Olympic Sculpture Park created 1.5 acres of salmon habitat in Elliott Bay on the southern end of Myrtle Edwards Park by removing fill and creating a shallow water bench and kelp forest along 990 feet of waterfront. The shoreline habitat created by the park is of benefit to several species including juvenile Chinook and chum salmon emerging from the Green/Duwamish river system.

4.2.1.18 Lake to Bay Loop Trail

This pedestrian and bicycle trail path would connect Lake Union Park, Seattle Center, Olympic Sculpture Park and Myrtle Edwards Park. The Lake to Bay Loop Trail will run approximately four miles from Lake Union at Westlake Avenue to Elliott Bay at Broad Street. It is being developed with funds from the Pro Parks levy approved by Seattle voters in November 2000. Construction of a pedestrian and bicycle overpass crossing Elliott Avenue and the railroad tracks to Myrtle Edwards Park is scheduled for

completion in the fall of 2012. The number of persons who currently use the route on city sidewalks is unknown. The trail will connect with the Cheshiahud Loop, which connects on the north end to the popular Burke-Gilman Trail.

4.2.2 Green Streets

Green Streets are sections of streets that are designated for pedestrian circulation. They are designed to serve as gathering places or corridors connecting activity areas and open spaces in attractive urban settings. City plans and policies recognized the open space functions of boulevard trails and Green Streets in meeting open space needs in the City.

Each Green Street has its own unique character and design. There are five designated Green Streets that intersect with the Alaskan Way right-of-way: Marion, Spring, University, Vine and Clay Streets. Further discussion of Green Streets and a figure showing their locations can be found in the Visual Quality Assessment (SDOT 2012m).

4.2.3 Public Art

A description of specific public art installations found in the study area is provided below proceeding from south to north along the Alaskan Way right-of-way.

4.2.3.1 Joshua Green Fountain

Joshua Green Fountain is a bronze fountain created by artist George Tsutakawa. It is located at Colman Dock Ferry Terminal (Pier 52) at Columbia Street and Alaskan Way.

4.2.3.2 Ivar Feeding the Gulls

Richard Beyer's bronze and aluminum cast sculpture of Ivar Haglund (1905–1985) feeding seagulls is located at Pier 54.

4.2.3.3 Christopher Columbus

Located at the south end of Waterfront Park (just north of Pier 57) is a larger-than-life bronze statue of Christopher Columbus by D. Bennett.

4.2.3.4 Waterfront Whimsea

A new sculpture was unveiled in 2010 at Waterfront Park reflecting sea-life along the Seattle waterfront. The 1,000 pound, 18.5-foot sculpture was crafted by Tim Sharp and other artists at Seattle's Iron Design Center and designed to act as a nautical-themed centerpiece for the area.

4.2.3.5 Waterfront Fountain

Located in the northern end of Waterfront Park (adjacent to Pier 59), *Waterfront Fountain* is a cast and welded bronze cubical structure fountain, surrounded by a series of stairs and walls that break up the space and provide interesting places to linger. The sculpture was begun by James FitzGerald and, in collaboration with the sculptor's widow, Margaret Tompkins, was completed by Terry Copple.

4.2.3.6 Piers 62/63

Located on Piers 62/63 is a 1991 public arts project titled *Piers 62/63*. This project is a wire mesh fence located around the piers' perimeter painted with a series of questions which, when seen against the backdrop of the city, quietly urge the viewer to examine the complex social and political relationship that make up a city. The questions, painted in red on a dense chain-link perimeter handrail fence, appear and disappear depending on the viewer's position and the conditions of light, sky, and water. However, this artwork has deteriorated and is now barely visible.

4.2.3.7 Welcoming Spirit

A sculpture by Melvin Schuler titled *Welcoming Spirit* is located on the east side of the Waterfront Bicycle/Pedestrian Path in front of the Waterfront Landing Condominiums at 1950 Alaskan Way.

4.2.3.8 Light Tower

This piece created by Ron Fisher is located at Pier 66 at the end of the breakwater protecting the marina. The 138-foot-tall *Light Tower* also referred to as the Bell Street Pier Beacon.

4.2.3.9 Danza Del Cerchio

A glass mosaic wall installation entitled *Danza Del Cerchio* was created in 1996 by Ann Gardner. It is located on an exterior wall of the Bell Harbor Conference Center on Pier 66.

4.2.3.10 Growing Vine Street

Two public art work projects by artist Buster Simpson, *Growing Vine Street 1* and *Growing Vine Street 2* are located at either side of Vine Street on the east side of Alaskan Way adjacent to the railroad line. These are two installations consisting of 55-gallon steel barrels strapped to fabricated steel pallets and galvanized-dipped as a single unit. The barrels are intended to remind passersby of the industrial activity of what was once a working waterfront adjacent to a salmon cannery in the vicinity of Vine Street.

4.2.3.11 Father and Son

Olympic Sculpture Park houses many pieces of sculpture. The closest sculpture to the EBSP is *Father and Son* by Louise Bourgeois. The piece includes two metal figures within a fountain and is located just north of the intersection of Broad Street and Alaskan Way.

4.2.4 Plans and Policies

4.2.4.1 Seattle Parks and Recreation Development Plan

The Seattle Parks and Recreation Development Plan (Seattle City Council Resolution 30181) is specific to acquisition and development efforts that would be pursued over the next 5 to 6 years. This Plan provides a recap of goals and policies relative to park acquisition and development, an update of the Gap Analysis that indicates areas of the city where the City's distribution guidelines for parks and open space remain to be met, and Seattle's adopted 2006–2011 CIP for parks and recreation. Seattle's

adopted 2006–2011 CIP for the Department of Parks and Recreation is part of the citywide CIP (Ordinance 121991).

4.2.4.2 Port of Seattle Parks and Recreation Access Guide

The Port of Seattle’s Parks and Shoreline Access Guide shows 19 locations along Puget Sound or the Duwamish waterways where the Port of Seattle provides shoreline access and/or other recreational opportunities. Within the EBSP area, there are four such sites:

- Pier 69 – Port of Seattle Headquarters,
- Pier 66 – Bell Street Pier,
- Pier 66 – Bell Street Pier Pedestrian Bridge, and
- Lenora Street Bridge and Viewpoint.

4.2.4.3 Central Waterfront Concept Design and Framework Plan

The Central Waterfront Concept Design and Framework Plan, supported by the City Council in July, 2012, envisions “a significant set of public realm improvements to create a dynamic urban and ecological edge between downtown Seattle and Elliott Bay, including a great and complete urban street and promenade along a new surface Alaskan Way, park space, strong east-west connections, spectacular views, spaces for diverse social and recreational programs, and access to Puget Sound.” Specific elements include replacement and improvements to Waterfront Park and Piers 62/63.

This page intentionally left blank.

CHAPTER 5. CONSTRUCTION EFFECTS AND MITIGATION

5.1 LAND USE AND SHORELINES

5.1.1 No Action Alternative

There are no construction impacts since the seawall is not being reconstructed under the No Action Alternative. Should the seawall fail in portions or throughout the alignment, there would be substantial disruptions to land use and shoreline uses prior to and during any emergency reconstruction of the seawall (see Section 6.1 for discussion of such impacts).

5.1.2 Alternative A

Construction of the seawall, habitat improvements and restored roadway would occur in stages over seven construction seasons. The current project schedule assumes that no work would occur during the peak summer months (Memorial Day weekend through Labor Day weekend) to minimize impacts on businesses. In addition, the currently designated in-water work window is from August 15 to February 15 but the allowable work windows would be reconfirmed during the permitting process. As effects on land use in the immediate project vicinity are temporary, no permanent change in land use or zoning are anticipated as a result of construction activities.

5.1.2.1 Central Seawall (S. Washington to Virginia Streets)

During construction of the Central Seawall, a vehicular detour would be provided east of the existing surface street, with three lanes under the existing viaduct and a fourth lane just west of the viaduct structure. Parking would be removed from under the viaduct. On-street parking could change somewhat depending on where construction is occurring. When work is occurring between Virginia and Madison Streets, 50 on-street spaces would be removed, as would 371 spaces under the viaduct. When work moves south to the area between Madison and S. Washington Streets, 40 on-street spaces would return, though the total number of metered spaces would be fewer than existing conditions.

The existing Waterfront Streetcar tracks would be removed (most of the track in this section has been removed as part of construction mitigation for WSDOT's Alaskan Way Viaduct Replacement Project). Pedestrian access to the waterfront piers would be provided throughout the construction period. When construction work is occurring immediately adjacent to a specific pier, there may be temporary access restrictions. Such restrictions would be in compliance with applicable fire codes dealing with emergency access and egress and approved traffic control plans from SDOT. Should such access not be possible for short periods of time, access to some or all business on a specific pier may be temporarily prohibited. Increases in noise and dust due to construction activities would occur.

Temporary construction easements would be required outward of the existing seawall along the entire length of the alignment. Such easements are needed to allow work to proceed on project elements, including removal of the seawall, temporary sheet-pile placements and construction of habitat benches. For Alternative A, these temporary easements would cover approximately 100,000 square feet of land.

The easements would need to be obtained primarily from government agencies, though easements from private land owners would also be needed.

Construction of the Central Seawall in Zone 4 (Seattle Aquarium/Park) would occur over one construction season. On-street parking on Alaskan Way in this zone would be removed for most of this period, though some or all could be restored during the summer construction shutdown period. The same would hold for loading zones in this area.

Construction in Zone 3 (Central Piers) would take a similar amount of time as in Zone 4, again with a summer construction shutdown. On-street parking on Alaskan Way in this zone would be removed for most of this period, though some or all could be restored during the summer construction shutdown period. The same would hold for loading zones in this area. On-pier parking would be temporarily inaccessible during portions of the construction period. On-pier supply deliveries may also be restricted during portions of the construction period.

Zone 2 (Ferry Terminal Zone) construction is proposed to be completed during 1 nine-month construction season (fall through spring). The EBSP team would work closely with the Seattle Fire Department to maintain emergency vehicle access at all times, including possible relocation of covered fire truck storage on site. The project team would also work closely with Washington State Ferries to maintain vehicular and pedestrian access to the ferry terminal throughout this construction period.

Construction in Zone 1 (Pioneer Square/Washington St. Boat Landing) is also expected to be completed in the same nine-month construction season (fall to spring) as Zone 2.

Though there would be adverse impacts during construction, they would be temporary in nature and are unlikely to affect long-term land use decisions or to result in any changes to zoning or other land use regulations.

5.1.2.2 North Seawall (Virginia to Broad Streets)

Construction of the North Seawall is constrained by a narrower right-of-way than the Central Seawall, resulting in a slower construction process in order keep three lanes of traffic moving. The existing waterfront streetcar tracks would be removed in order to provide sufficient right-of-way for the three lanes, the waterfront multi-use trail and a sidewalk on the west side.

On-street parking would change somewhat depending on where construction is occurring, though the changes would be fewer than those experienced during construction of the Central Seawall. When work is occurring between Broad and Battery Streets, 36 on-street spaces would be removed. When work moves south to the area between Battery and Virginia Streets, 48 on-street spaces would be temporarily removed.

Preliminary schedules and sequencing assume construction beginning at Broad Street and moving south toward Virginia over a period of approximately four and a half years. Construction could also begin at Virginia Street and move north, taking approximately the same amount of time.

Zone 6 construction is estimated to take two construction seasons and would result in the temporary loss of all on-street parking within the zone. On-pier parking may be temporarily inaccessible during

portions of the construction period. On-pier supply deliveries may also be restricted during certain periods. The project team would work closely with the operator of the Victoria Clipper ferry service to provide access to the terminal for passengers, employees and suppliers.

Work in Zone 5 would take a similar amount of time as in Zone 6, with similar impacts. The project team would work closely with the Port of Seattle and cruise ship operators to provide access to the cruise ship terminal during the construction period.

Though there would be adverse impacts during construction, they would be temporary in nature and are unlikely to affect long-term land use decisions or to result in any changes to zoning or other land use regulations.

As during Central Seawall construction, temporary construction easements would be required outward of the existing seawall along the entire length of the North Seawall alignment during North Seawall construction. For Alternative A, these temporary easements would cover approximately 81,000 square feet of land. The easements would need to be obtained primarily from government agencies, though easements from private land owners would also be needed.

5.1.3 Alternative B

Construction of the seawall, habitat improvements and restored roadway for Alternative B would occur in stages over a nine-year period. The current project schedule assumes that no work would occur during the peak summer months (Memorial Day weekend through Labor Day weekend) to minimize impacts on businesses. In addition, the currently designated in-water work window is from August 15 to February 15, but the allowable work windows would be reconfirmed during the permitting process. As effects on land use in the immediate project vicinity are temporary, albeit for a longer time period than under the other build alternatives, no permanent change in land use or zoning are anticipated as a result of construction activities.

5.1.3.1 Central Seawall (S. Washington to Virginia Streets)

The larger wall pullback proposed for Alternative B, and the use of the soldier-pile construction technique is anticipated to take two years longer to complete the Central Seawall than under Alternative A. This longer construction period would affect Zone 4 in particular (Seattle Aquarium/Parks) where construction is expected to take two construction seasons, versus one in Alternative A. As with Alternative A, during construction of the Central Seawall a vehicular detour would be provided east of the existing surface street, with three lanes under the existing viaduct and a fourth lane just west of the viaduct structure. During this period, parking would be removed from under the viaduct and would not return until completion of the Central Seawall. This loss of parking would reduce the supply of available parking that serves the land uses along the waterfront.

Pedestrian access to the waterfront piers would be provided throughout construction. When construction work is occurring immediately adjacent to a specific pier, there may be temporary access reroutings and restrictions. Such restrictions would be in compliance with applicable fire codes dealing with emergency access and egress and approved traffic control plans from SDOT. Should access not be possible for short periods of time, access to specific piers may be temporarily suspended.

Increases in noise, vibration and dust due to construction activities would occur and may distract from the pedestrian experience. The general disruption caused by construction of the project, change in traffic patterns and loss of parking may, on a temporary basis, reduce the attractiveness of the waterfront to residents and visitors. Given the longer construction period, the overall period in which employees, visitors and residences would experience these effects would be greater than in Alternative A.

As with Alternative A, temporary construction easements would be required outward of the existing seawall along the entire length of the alignment. Such easements are needed to allow work to proceed on project elements including removal of the seawall, temporary sheet-pile placements and construction of habitat benches. For Alternative B, these temporary easements would cover approximately 94,000 square feet of land. The easements would need to be obtained primarily from government agencies, though temporary easements from private land owners would also be needed.

5.1.3.2 North Seawall (Virginia to Broad Streets)

The impacts of construction of the North Seawall under Alternative B are similar to Alternative A except that the BSP wall technique is slightly more time consuming. This results in extended impacts on parking, as well as construction noise and dust.

Temporary and permanent construction easements for the North Seawall would be approximately the same as for Alternative A (see Section 5.1.2.2 for details).

5.1.4 Alternative C

Construction effects of Alternative C on land use and shorelines would be similar to those for Alternative A, including effects related to the duration of construction. As effects on land use in the immediate project vicinity are temporary, no permanent change in land use or zoning are anticipated as a result of construction activities.

5.1.5 Mitigation Measures

A number of mitigation measures are proposed to address adverse impacts on adjacent land uses during project construction. These measures can be found in the following Discipline Reports: Air Quality, Economics, Noise and Vibration, Public Services and Utilities, and Transportation (SDOT 2012a, 2012b, 2012c, 2012d, and 2012e, respectively). No additional mitigation specific to land use is proposed.

Mitigation measures to address impacts to the shoreline can be found in the following discipline reports: Contaminated Materials, Fish, Wildlife and Vegetation, and Water Resources (SDOT 2012f, 2012g, and 2012h, respectively). No additional mitigation specific to shorelines is proposed.

The project would provide timely communications with property owners as construction activities proceed. Details on detours, utility disruptions and other critical activities would be provided. The project team would work with individual property owners concerning access issues, during both design and construction phases. The project also plans on shutting down construction during the peak summer

months to minimize impacts on visitor-oriented businesses and eliminate construction noise during the period when businesses and residences are most likely to have windows open.

Appropriate compensation would be provided for any temporary or permanent easements required for the project. See the Economics Discipline Report (SDOT 2012b) for discussion of permanent business relocations.

5.2 PARKS AND RECREATION

5.2.1 No Action Alternative

There are no construction impacts since the seawall is not being reconstructed under the No Action alternative. Should the seawall fail in portions or throughout the alignment, there would be substantial disruptions to parks and recreational facilities prior to and during reconstruction of the seawall. See 6.2.1 for discussion of such impacts.

5.2.2 Alternative A

5.2.2.1 Central Seawall (S. Washington to Virginia Streets)

During construction of the Central Seawall, a vehicular detour would be provided east of the existing surface street, with three lanes under the existing viaduct and a fourth lane just west of the viaduct structure. During this period, parking would be removed from under the viaduct and would not return until completion of the Central Seawall. This loss of parking would reduce the supply of available parking that serves the various parks and recreational venues. See discussion in Section 5.1.2.1 for details.

Pedestrian access to Waterfront Park, the Seattle Aquarium and Pier 62/63 would be provided to the maximum extent possible. When construction work is occurring immediately adjacent to a specific pier, there may be temporary access reroutings and restrictions. Such restrictions would be in compliance with applicable fire codes dealing with emergency access and egress and approved traffic control plans from SDOT. Should access not be possible for short periods of time, access to specific recreational amenities may be temporarily suspended.

Increases in noise, vibration and dust due to construction activities would occur and may distract somewhat from the participant experience. The general disruption caused by construction of the project, change in traffic patterns and loss of parking may, on a temporary basis, reduce the attractiveness of the waterfront to residents and visitors.

Construction of the Central Seawall in Zone 4 (Seattle Aquarium/Park) would occur during one construction season. On-street parking on Alaskan Way in this zone would be removed for most of this period, though some or all could be restored during the summer construction shutdown period. The same would hold for loading zones in this area. See the Transportation Discipline Report (SDOT 2012e) for details.

Construction in Zone 3 (Central Piers) would take a similar amount of time as in Zone 4, again with a summer shutdown. On-street parking on Alaskan Way in this zone would be removed for most of this 16

month period, though some or all could be restored during the summer construction shutdown period. The same would hold for loading zones in this area. On-pier parking would be temporarily inaccessible during portions of the construction period. On-pier supply deliveries may also be restricted during portions of the construction period.

Zone 2 (Ferry Terminal Zone) construction is proposed to be completed during 1 nine-month construction season (fall through spring). The project team would work closely with Washington State Ferries to maintain vehicular and pedestrian access to the ferry terminal throughout this construction period.

Construction in Zone 1 (Pioneer Square/Washington Street Boat Landing) is also expected to be completed in one construction season simultaneous with work in Zone 2 (fall to spring).

Specific impacts to parks and recreational facilities during construction are discussed below.

5.2.2.1.1 Washington Street Public Boat Landing

The Washington Street Public Boat Landing pergola would likely be removed and restored before and/or during seawall construction in this area. The pergola would not likely be reinstalled until near the completion of seawall work in Zone 1, which would likely be at the end of the construction period. See the Cultural, Historic, and Archaeological Resources Discipline Report (SDOT 2012k) for more information.

5.2.2.1.2 Colman Dock Ferry Terminal (Shoreline Public Access)

Access to existing designated public areas at Colman Dock would continue to be provided during construction. The Marion Street overpass would continue in operation except when seawall work is occurring immediately adjacent to it. In this instance, a street-level detour likely utilizing Madison Street, Columbia Street, and Yesler Way would be provided.

5.2.2.1.3 Fire Station No. 5 (Shoreline Public Access)

Access to the existing designated public access area for harbor viewing would continue to be provided except when seawall construction is occurring in the immediate area. In this case, access may be restricted for a relatively short period of time. Also see the Public Services and Utilities Discipline Report (SDOT 2012d).

5.2.2.1.4 Pier 54 (Shoreline Public Access)

Access to the public plaza, art installation and public access area would continue to be provided except when seawall construction is occurring in the immediate area. In this instance, access may be restricted for a relatively short period of time.

5.2.2.1.5 Pier 55 (Public Access to Blake Island/Tillicum Village)

Regular boat services from Pier 55 to Blake Island State Park would continue to be accessible during construction. Portions of the overwater walkways between Piers 55 and 56 that provide access to the Argosy boat docks may be closed for short periods, but access should be available at all times to the

docks. Construction would result in the loss of parking under the viaduct for the length of work on the Central Seawall. On-street parking and bus loading zones would remain available except for the one construction season in which work would be occurring in Zone 3.

5.2.2.1.6 Piers 55 and 56 (Shoreline Public Access)

Public access areas at these two piers would continue to be accessible during construction except when seawall construction is occurring in the immediate area. During this period access may be constrained.

5.2.2.1.7 Pier 57 (Shoreline Public Access)

Public access areas at this pier would continue to be reachable during construction. When construction is occurring in the immediate area, access may be via Waterfront Park.

5.2.2.1.8 Waterfront Park

Waterfront Park would continue to be accessible during construction. One or more of the access points to Waterfront Park may be restricted when work is occurring in the immediate vicinity.

5.2.2.1.9 Pier 59 and Seattle Aquarium

Public access to the Seattle Aquarium would remain open throughout construction. When work is occurring in the immediate vicinity of the main entrance, visitors may have to access the Seattle Aquarium through an alternate route such as through Waterfront Park for a short duration.

Construction would result in the loss of parking under the viaduct for the length of work on the Central Seawall. On-street parking and bus loading zones would remain available except for the one construction season in which work would be occurring in Zone 4. The loss of parking and the more difficult bus parking situation may dissuade some patrons and school groups from visiting the Seattle Aquarium during the period of construction in Zone 4.

Service vehicles would still have access to the Seattle Aquarium facility from either the north end of the facility or the south, depending on the specific construction stage. The project team would work closely with Seattle Aquarium management to ensure access for visitors, staff and suppliers remains available through the construction period.

Fish and aquatic mammals in the Seattle Aquarium may be sensitive to construction noise and vibration, and would be impacted by any disruption of water and electrical service. Dust and other airborne contaminants may also have an impact on some of the fish and aquatic mammals in the collection, especially those in the more open area in the northern building of the Seattle Aquarium complex.

Construction activities in the vicinity of the Seattle Aquarium are also likely to have a negative impact on Seattle Aquarium revenue during the construction period. Approximately 77 percent of the Seattle Aquarium's 2012 budget is projected to be provided by admissions and membership fees. Construction in the vicinity of the Seattle Aquarium would likely take one construction season under Alternative A. While no construction activities would occur during the peak summer months, construction may impact school visits during the popular spring school field trip period.

5.2.2.1.10 Pier 62/63

Access to Pier 62/63 would continue during construction except when work is occurring in the immediate vicinity of the Pier. During this relatively brief period, access may be restricted.

5.2.2.2 North Waterfront (Virginia to Broad Streets)

Construction of the North Seawall in Zone 5 (Bell Harbor Zone) would take approximately two construction seasons (September through May), while work in Zone 6 (North Pier Zone) would take approximately two construction seasons. On-street parking on Alaskan Way in each zone would be removed during the construction period, though some or all could be restored during the summer construction shutdown period. The same would hold for loading zones in this area. See Table 5-1 (this report) and the Transportation Discipline Report (SDOT 2012e) for details.

5.2.2.2.1 Pier 66, Shoreline Public Access

Public facilities would continue to be accessible during construction. When work is occurring in the immediate vicinity, certain access points may be restricted, but alternative access points are available.

5.2.2.2.2 Edgewater Hotel (Shoreline Public Access)

The public waterfront viewing area would remain accessible during construction. The project team would work closely with the Edgewater Hotel to ensure access to the public viewing area and the hotel itself during all construction stages.

5.2.2.2.3 Pier 69 (Shoreline Public Access)

The wide entry plaza should allow continuous access to the pier and its public facilities, including the Victoria Clipper, throughout construction. Points of access to the entry plaza may change during the one construction season when construction is occurring in the immediate vicinity.

5.2.2.2.4 Pier 70 (Shoreline Public Access)

Public access areas would remain accessible during construction. When work is occurring in the immediate vicinity, access may be restricted for a relatively short period of time.

5.2.2.2.5 Olympic Sculpture Park

Olympic Sculpture Park would remain accessible through seawall construction, since entry points are available along Broad Street east of Alaskan Way. The Alaskan Way entrance to Olympic Sculpture Park may be restricted during a relatively short period of time when work is occurring in the immediate vicinity of Broad Street.

5.2.2.2.6 Lake to Bay Loop Trail

Pedestrian and bicycle access from the waterfront, through Olympic Sculpture Park and Myrtle Edwards Park, would be available throughout the construction period, though temporary detours may be required during certain construction stages.

5.2.2.3 General

5.2.2.3.1 Waterfront Bicycle and Pedestrian Path

This facility would remain in operation throughout construction. From Washington Street to Pike Street, the path would be in its existing location. At Pike Street, it would cross to the east side of the temporary roadway at a signalized intersection and transition to the existing trail in the vicinity of the Waterfront Landings condominium.

5.2.2.3.2 Waterfront Promenade

The continuous sidewalk on the west side of Alaskan Way would continue in place except within the construction zone where detours or temporary closures may occur. Access to parks and recreational spaces would continue, as would activities such as walking and viewing, though with varying access routes. Noise, vibration and dust impacts would occur during active construction periods; the summertime shutdown of construction would eliminate these impacts during the peak summer months.

5.2.2.3.3 Green Streets

The five Green Streets mentioned in Section 4.2.2 would not be directly impacted by seawall construction. East-west pedestrian access between downtown/Belltown and the waterfront could be temporarily impacted during seawall construction in the immediate area of the five streets. The duration of such impacts would likely be limited to no more than two construction seasons. The multi-year vehicular detour route in the Central Seawall area would not likely have an adverse impact on east-west pedestrian flows, since all intersections would be signalized, including pedestrian crossing signals.

5.2.2.3.4 Public Art

All public art discussed in Section 4.2.3 would remain accessible during most of the construction period. When work is occurring in the immediate vicinity of an artwork, access may be restricted and protection provided around the artwork to ensure that it is not damaged as a result of construction. Temporary removal of artwork may be needed in certain circumstances. See discussions above of specific access effects for each pier along the seawall. In particular, *Father and Son*, a sculpture by Louise Bourgeois at the corner of Alaskan Way and Broad Street, is located very close to the project limits and may require protection during construction in the immediate area. During this time, the sculpture may not be visible to the public and the fountain turned off.

5.2.3 Alternative B

5.2.3.1 Central Seawall (S. Washington to Virginia Streets)

The greater wall pull back and the use of the soldier pile construction technique is anticipated to result in a longer overall construction period, particularly affecting Zones 3 (Central Piers) and 4 (Seattle Aquarium/Parks). The construction in each of these two zones is expected to take two construction seasons, versus one in Alternatives A or C. As with the other alternatives, during construction of the Central Seawall, a vehicular detour would be provided east of the existing surface street, with three

lanes under the existing viaduct and a fourth lane just west of the viaduct structure. During this period, parking would be removed from under the viaduct and would not return until completion of the Central Seawall. This loss of parking would reduce the supply of available parking that serves the various parks and recreational venues.

Pedestrian access to Waterfront Park, the Seattle Aquarium and Pier 62/63 would be provided to the maximum extent possible. When construction work is occurring immediately adjacent to a specific pier, there may be temporary access reroutings and restrictions. Such restrictions would be in compliance with applicable fire codes dealing with emergency access and egress and approved traffic control plans from the City. Should access not be possible for short periods of time, access to specific recreational amenities may be temporarily suspended.

Increases in noise, vibration and dust due to construction activities would occur and may distract somewhat from the participant experience. The general disruption caused by construction of the project, change in traffic patterns and loss of parking may, on a temporary basis, reduce the attractiveness of the waterfront to residents and visitors. Given the longer construction period, the overall period in which employees, visitors and residences would experience these effects would be greater than in Alternatives A or C.

Generally speaking, the specific impacts to parks and recreational facilities during construction would be similar to those discussed under Alternative A above, except for the increased duration mentioned earlier. Exceptions to this are discussed below.

5.2.3.1.1 Washington Street Public Boat Landing

The Washington Street Public Boat Landing pergola would likely be removed and restored before and/or during seawall construction in this area. The restored pergola would be located 15 feet west of its current location, improving the connection to the water and providing new public space along Alaskan Way. Construction activities in this area could also include installation of a new gangway leading to floats providing short-stay boat moorage as well as a new intertidal habitat bench and a boardwalk or boulders for seating and viewing. See the Cultural, Historic, and Archaeological Resources Discipline Report (SDOT 2012k) for more information.

5.2.3.1.2 Waterfront Park

The creation of the Water Plaza (Option 1) or the Land Plaza (Option 2) would be occurring directly in front of Waterfront Park. Waterfront Park would continue to be accessible during construction. One or more of the access points to Waterfront Park may be restricted when work is occurring in the immediate vicinity during a two-year period.

5.2.3.1.3 Pier 59 and Seattle Aquarium

The complexity of construction of the seawall pullback in this area would likely have a greater effect on Seattle Aquarium access than under Alternatives A or C. The creation of the Water Plaza (Option 1) or the Land Plaza (Option 2) would be occurring directly in front of the Seattle Aquarium. Public access to the Seattle Aquarium would remain open throughout construction, though when work is occurring in

the immediate vicinity of the main entrance, visitors may have to access the Seattle Aquarium through an alternate route, such as through Waterfront Park.

Construction would result in the loss of parking under the viaduct for the length of work on the Central Seawall. On-street parking and bus loading zones would remain available except for the two construction seasons in which work would be occurring in Zone 4. The loss of parking and the more difficult bus parking situation may dissuade some patrons and school groups for visiting the Seattle Aquarium during the period of construction in Zone 4.

Service vehicles would still have access to the Seattle Aquarium facility from either the north end of the facility or the south, depending on the specific construction stage. The project team would work closely with Seattle Aquarium management to ensure access for visitors, staff and suppliers remains available through the construction period.

5.2.3.2 North Waterfront (Virginia Street to Broad Street)

The construction duration of Alternative B for the North Seawall is similar to that for Alternatives A and C, though possibly some months longer due to the different construction technique. In Zone 5 (Bell Harbor Zone), work would take approximately three construction seasons (September through May), while work in Zone 6 (North Pier Zone) would take approximately two construction seasons. On-street parking on Alaskan Way in each zone would be removed for the construction period, though some or all could be restored during the summer construction shutdown period. The same would hold for loading zones in this area.

Generally speaking, the specific impacts to parks and recreational facilities during construction would be similar to those discussed under Alternative A, above.

5.2.3.3 General

5.2.3.3.1 Waterfront Bicycle and Pedestrian Path

From Washington Street to Pike Street, the path would be in its existing location. At Pike Street, the trail would cross to the east side of the temporary roadway at a signalized intersection and transition to the existing trail in the vicinity of the Waterfront Landings condominium.

5.2.3.3.2 Waterfront Promenade

The continuous sidewalk on the west side of Alaskan Way would continue in place except within the construction zone where detours or temporary closures may exist. Access to parks and recreational spaces would continue, as would activities such as walking and viewing. Noise, vibration and dust impacts would occur during active construction periods; the summertime shutdown of construction would negate these impacts during the peak summer months.

5.2.3.3.3 Green Streets

The five Green Streets mentioned in Section 4.2.2 would not be directly impacted by seawall construction.

5.2.3.3.4 Public Art

All public art discussed in Section 4.2.3 would remain accessible during most of the construction period, though the extended construction period may result in a longer impact in accessing specific art works compared to Alternative A. When work is occurring in the immediate vicinity of an artwork, access may be restricted and protection provided around the artwork to ensure that it is not damaged as a result of construction. In particular, *Father and Son*, a sculpture by Louise Bourgeois at the corner of Alaskan Way and Broad Street, is located very close to the project limits and may require protection during construction in the immediate area. During this time, the sculpture may not be visible to the public and the fountain turned off. Temporary removal of artwork may be needed in certain circumstances.

5.2.4 Alternative C

Construction effects of Alternative C on parks and recreational facilities would be similar to those for Alternative A, including effects related to the duration of construction.

5.2.5 Mitigation Measures

Construction mitigation measures proposed for other disciplines, such as Transportation (parking), Economics, Air Quality and Noise and Vibration would apply to impacts on parks and recreational facilities as well.

Most of the construction impacts on parks and recreational facilities relate to the proximity of construction activities to a specific site. Parks and recreational facilities are most heavily used during the summer months and thus would benefit from the summer shut-down of construction activity. Some of the parking lost during the construction period may be restored during these summer months, minimizing the adverse effect during the period of greatest parking demand along the waterfront.

During the construction period, noise attenuation may be provided to reduce the effect on pedestrians seeking to enjoy Waterfront Park, art work along the waterfront, or the views along the waterfront. See the Air Quality and Noise and Vibration Discipline Reports (SDOT 2012a, 2012c) for additional details.

An active public information effort would take place to let residents and visitors know how to access the waterfront during construction, where parking is available and how to reach the area by transit. During the active construction season, the City would work with the Seattle Aquarium and other affected recreational sites to identify alternative parking sites and convenient loading zones for school and other charter buses. See the Transportation Discipline Report (SDOT 2012e) for additional details on access and parking mitigation.

During construction in Zone 4 (Seattle Aquarium/Parks), the current pedestrian connection between the Pike Place Market and the Seattle Aquarium/Waterfront Park would be disrupted for one to two construction seasons. A marked detour would be provided at all times with appropriate signage at both the Pike Place Market and along the waterfront. Pedestrian links between the waterfront and Western Avenue/First Avenue would be provided at least every two blocks during the construction period to minimize significant out-of-direction pedestrian movements.

A continuous pedestrian/bicycle corridor on the east side of Alaskan Way would be provided throughout construction to facilitate linkages among the various waterfront parks and recreational facilities. A continuous pedestrian corridor would also be provided on the west side of Alaskan Way during the peak summer months; during construction in any given zone, a safe, clean, well lit pedestrian detour route would be provided to facilitate access to the various facilities along the waterfront.

The construction of temporary, over-water access points between Piers 54 and 55, and Piers 56 and 57 would be examined to facilitate pedestrian movement among the historic waterfront piers. Temporary impacts on boat moorage, emergency egress from piers, and other factors would need to be considered.

Art work in the immediate construction zone would be protected as necessary from damage due to construction activity. Protection could include encapsulation of the art work in place or temporary removal and storage of the art work.

This page intentionally left blank.

CHAPTER 6. OPERATIONAL EFFECTS AND MITIGATION

6.1 LAND USE AND SHORELINES

6.1.1 No Action Alternative

Table 6-1 shows the activities that would be triggered under the three No Action scenarios described in Chapter 1. The existing seawall and surface street would remain in place unless all or a portion of the seawall collapses as a result of tidal or seismic activity. Under the Minimal Damage scenario, routine maintenance activities would continue that may occasionally result in sidewalk and/or lane closures. Short duration impacts, such as construction noise, dust and access restrictions could result from such activities.

TABLE 6-1. OPERATIONAL ACTIVITIES BY NO ACTION SCENARIO

Operational Activity	Minimal Damage	Loss of Functionality	Collapse
Annual operations and maintenance	Y	N	N
Tidal repairs	Y	N	N
Seismic repairs	Y	N	N
Transportation impacts	N	Y	Y
Utility impacts	N	Y	Y
Damages to Alaskan Way Surface Street	N	Y	Y
Temporary reroute of Sounder Commuter Rail (Seattle–Everett)	N	N	Y
Temporary reroute of Amtrak service (Seattle– Vancouver; Seattle– Spokane– Chicago)	N	N	Y
Environmental contamination	N	N	Y
City Shoreline Stabilization Needed	N	N	Y

Source: USACE 2011, Figure 22.

It is likely that sidewalk, parking and/or travel lanes would be impacted with short-term closures or detours required as repairs are made. Under the Loss of Functionality scenario, if there is a series of failures or a major collapse of the seawall, access along the waterfront would be partially or severely restricted or even prohibited. Construction activities to provide temporary access to essential facilities such as Colman Dock Ferry Terminal and Fire Station No. 5 would likely result in short-term noise and dust. Access along the waterfront and to and from the waterfront would be restricted in areas of seawall failure and likely in adjacent areas where further failure would be possible.

Under the Collapse of the Seawall scenario, access to piers along the waterfront could be severely restricted or prohibited until reconstruction of the seawall could be completed. Construction impacts similar to those of the build alternatives analyzed in this discipline report would occur if the seawall were reconstructed at some future date. However, unlike the proposed project, reconstruction after a collapse of the seawall would likely occur on a year-round basis (with in water restrictions during the

fish window period) and access to piers and, possibly, businesses and residences on the east side of Alaskan Way, would be unavailable or severely restricted, resulting in business closures and possibly unreachable residential units for an indeterminate amount of time.

6.1.2 Effects Common to the Build Alternatives

The seawall and restored roadway components would all be within existing street right-of-way. The seawall and roadway are a permitted use in the DH (downtown harborfront) zone. The completion of the project would provide a long-term solution to the tidally- and seismically-vulnerable seawall and would be supportive of public- and private-sector improvements along the waterfront, consistent with existing zoning and comprehensive plan designations.

The replaced seawall and associated project elements would continue to support existing activities and development patterns assumed by local land use plans. Property or tenant improvements and improvements to parks and recreational facilities (both public and private) that may have been in the planning stages for some time could be viewed as more timely by individual property owners after the necessary seawall safety improvements and disruptions associated with construction are in the past. These potential public and private investments, along with the additional public amenities associated with any action alternative, also could prompt increased public use and visitation to the area. The Washington Street Public Boat Landing pergola would be restored as part of the project.

Several permanent business displacements are likely with all three build alternatives. See the Economic Discipline Report (SDOT 2012b) for details.

6.1.3 Alternative A

Long-term impacts to adjacent land uses under this alternative are negligible. No private property would be acquired for this alternative. Permanent easements totaling up to 44,000 square feet for the Central Seawall and 70,000 square feet for the North Seawall may be needed for habitat improvements but would not have a negative effect on existing uses. These permanent easements would need to be obtained primarily from government agencies.

The change in location of the seawall up to 15 feet landward of its existing location, would affect the extent of the 200-foot shoreline zone by moving property affected by the shoreline code eastward up to 15 feet.

6.1.4 Alternative B

Long-term impacts to adjacent land uses under this alternative are negligible. No private property would be acquired for this alternative. Permanent easements totaling up to 126,000 square feet for the Central Seawall and 70,000 square feet for the North Seawall may be needed for habitat improvements, but would not have a negative effect on existing uses. These permanent easements would need to be obtained primarily from government agencies.

The change in location of the seawall up to 75 feet landward of its existing location in Zone 4 would affect the extent of the 200-foot shoreline zone, moving property affected by the shoreline code eastward up to 75 feet.

The Washington Street Public Boat Landing pergola would be restored as part of the project. Informal public access for viewing the new intertidal habitat beach area could be provided. To the north of the boat landing, natural features may be added for seating, limited physical access to, and viewing of, the new intertidal habitat beach. The boat landing would continue to provide some seating and views of the water and mountains to the west.

Design concepts show a permanent loss of approximately six short-term parking spaces, as well as loading zones and charter bus zones between University and Madison Streets in Zone 3 (Central Piers).

The “Water Plaza” option in Zone 4 creates outdoor educational opportunities in conjunction with the Seattle Aquarium that could be viewed as a benefit to that facility. Other habitat improvements in this zone could also have educational and view benefits.

The proposed short-stay boat moorage at Washington Street Boat Landing may also encourage additional visitors to this portion of the waterfront and further encourage pedestrian flows between the waterfront and the historic Pioneer Square neighborhood.

6.1.5 Alternative C

Long-term impacts to adjacent land uses under this alternative are negligible. No private property would be acquired for this alternative. Similar to Alternative B, permanent easements totaling up to 126,000 square feet for the Central Seawall and 70,000 square feet for the North Seawall may be needed for habitat improvements, but would not have a negative effect on existing uses. These permanent easements would need to be obtained primarily from government agencies. See the Economics Discipline Report (SDOT 2012b) for discussion of permanent business displacements.

As with Alternative B, informal public access for viewing the new intertidal habitat beach area could be provided. To the north of the boat landing, natural features may be added for seating, limited physical access to, and viewing of, the new intertidal habitat beach. The boat landing would continue to provide some seating and views of the water and mountains to the west.

The change in location of the seawall up to 15 feet landward of its existing location would affect the extent of the 200-foot shoreline zone and move property affected by the shoreline code eastward up to 15 feet.

6.1.6 Indirect Effects

The new seawall would provide adjacent pier owners with a seismically stable seawall structure. Property or tenant improvements that may have been in the planning stages for some time may now be viewed as more timely by individual property owners, although no changes to land use or shoreline zoning are anticipated as a result of seawall construction.

Improvements that may attract additional visitors to the general vicinity of the waterfront may also have beneficial indirect effects on adjacent areas, especially Pioneer Square, Pike Place Market, Belltown and Olympic Sculpture Park. Amenities including the proposed short-stay boat moorage (Alternative B), the Water or Land Plaza (Alternative B) and enhanced viewpoints (Alternatives B and C) may also attract new investment or reinvestment in the area.

6.1.7 Mitigation Measures

No long-term adverse impacts are anticipated to land use and shorelines; therefore, no mitigation is proposed.

6.2 PARKS AND RECREATION

6.2.1 No Action Alternative

Under the Minimal Damage scenario, routine maintenance activities would continue that may occasionally result in sidewalk and/or lane closures. Short duration impacts, such as construction noise, dust and access restrictions could result from such activities but would have minimal impact on parks and recreational facilities.

It is likely that sidewalk, parking and/or travel lanes would be impacted with short-term closures or detours required as repairs are made. Under the Loss of Functionality scenario, if there is a series of failures or a major collapse of the seawall, access to Waterfront Park, the Seattle Aquarium, Piers 62 and 63 and public access points along the waterfront would be partially or severely restricted or even prohibited. Access to the boat service to Blake Island State Park would also be partially or severely restricted or prohibited. The waterfront multi-use trail may be unusable in whole or in part. Parking serving the parks and recreation facilities may be closed for shorter or longer periods, depending on location of seawall failure and size and location of construction zones. Access to the parks and recreation facilities could be severely restricted or prohibited until reconstruction of the seawall could be completed. Failure of the seawall in the vicinity of the Seattle Aquarium could have major detrimental effects on the fish and marine mammals in the collection, especially if there were utility disruptions.

Construction impacts similar to those of the build alternatives analyzed in this discipline report would occur as the seawall is reconstructed at some future date. However, unlike the proposed project, reconstruction after a collapse of the seawall would likely occur on a year-round basis (with in water restrictions during the fish window period).

6.2.2 Alternative A

Upon completion of the EBSP, access to parks and recreational facilities along the waterfront would be similar to what it is today. Riparian plantings along the seawall edge would add some visual interest along the waterfront as pedestrians approach parks, recreational facilities, ferry terminals, and existing viewpoints on the piers. Bus loading zones would be provided as they are today, providing access to the Seattle Aquarium and various parks and recreation spaces.

6.2.2.1 Waterfront Bicycle and Pedestrian Trail

The multipurpose pathway would be extended two blocks from Clay Street to Broad Street. The first block, from Clay Street to Vine Street would be on the east side of Alaskan Way. At Vine Street the path would cross to the west side of Alaskan Way where it would continue to Broad Street and connect to the multipurpose path through Olympic Sculpture Park and Myrtle Edwards Park.

6.2.2.2 Waterfront Promenade

There would be limited changes to the Waterfront Promenade as a result of Alternative A. The sidewalk would generally be in the same location as today and of similar width. Access to parks and recreational spaces would continue, including activities such as walking and viewing. Open water views to the west would be similar to existing conditions. The addition of riparian plantings at various locations along the seawall would add visual interest.

6.2.2.3 Washington Street Boat Landing

The Washington Street Boat Landing pergola would be restored as part of the project. It would be restored to its existing location and continue to provide some seating and views of the water and mountains to the west.

6.2.2.4 Colman Dock Ferry Terminal (Shoreline Public Access)

Access to existing designated public access areas at Colman Dock would continue to be provided.

6.2.2.5 Fire Station No. 5 (Shoreline Public Access)

Access to the existing designated public access area for harbor viewing would continue to be provided.

6.2.2.6 Pier 54 (Shoreline Public Access)

The public plaza, art installation and public access area would continue to be accessible as a result of the project.

6.2.2.7 Pier 55 (Public Access to Blake Island/Tillicum Village)

Regular boat services from Pier 55 to Blake Island State Park would continue to be accessible. On-street parking and bus loading zones would remain available.

6.2.2.8 Piers 55 and 56 (Shoreline Public Access)

Public access areas at these two piers would continue to be accessible, as would the public seating between the piers and at the end of Pier 56.

6.2.2.9 Pier 57 (Shoreline Public Access)

All public access areas at this pier would continue to be accessible.

6.2.2.10 Waterfront Park

Waterfront Park, including the art work within the park, would continue to be accessible upon completion of the EBSP. The new seawall would remain independent of the structures on which Waterfront Park sits, allowing any reconstruction or new park facility to occur independent of the seawall location.

6.2.2.11 Pier 59 and Seattle Aquarium

Public access on Pier 59 along portions of the south and north sides of the Seattle Aquarium would continue to be provided. Access to the Seattle Aquarium itself would continue to be provided at existing locations. The relationship of the seawall and pedestrian sidewalk to the Seattle Aquarium would remain as it is today and provide flexibility to the Seattle Aquarium for future expansion.

Parking and bus loading zones would be similar to that provided today.

6.2.2.12 Pier 62/63

Access to the passive, view-oriented park at Pier 62/63 would remain as today. The location and proximity of the seawall, similar to what it is today, should have no adverse impact on future plans for the pier, especially related to potential Seattle Aquarium expansion.

6.2.2.13 Pier 66, Shoreline Public Access

Public facilities would continue to be accessible. Sidewalk widths would be similar to today and parking and loading zones serving the cruise ships would remain consistent with what is there today.

6.2.2.14 Edgewater Hotel (Shoreline Public Access)

The public waterfront viewing area would remain accessible.

6.2.2.15 Pier 69 (Shoreline Public Access)

Public access for views and public fishing would remain accessible. Access to the Victoria Clipper would remain as it is today.

6.2.2.16 Pier 70 (Shoreline Public Access)

Public access areas would remain accessible.

6.2.2.17 Olympic Sculpture Park

The extension of the Waterfront Bicycle and Pedestrian Path from Vine Street to Broad Street would improve bicycle and pedestrian access to Olympic Sculpture Park. No other changes in access are proposed.

6.2.2.18 Lake to Bay Loop Trail

The extension of the Waterfront Bicycle and Pedestrian Path to Broad Street would provide connections into and through Olympic Sculpture Park and Myrtle Edwards Park and would facilitate a direct tie in to the Lake to Bay Loop Trail.

6.2.2.19 Green Streets

The five Green Streets mentioned in Section 4.2.2 would not be precluded by this alternative.

6.2.2.20 Public Art

All public art discussed in Section 4.2.3 would remain accessible under this alternative.

6.2.2.21 Indirect Effects

No indirect construction effects related to parks and recreational facilities have been identified.

6.2.3 Alternative B

Upon completion of the EBSP, access to parks and recreational facilities along the waterfront would be similar to what it is today. Riparian plantings along the seawall edge would add some visual interest along the waterfront as pedestrians approach parks, recreational facilities, ferry terminals, and existing viewpoints on the piers.

New viewpoints between some piers (between Piers 48 and 50, 54 and 55, 56 and 57, 60 and 62/63, overlooking the Bell Harbor Marina, between Piers 66 and 67, 67 and 69, and 69 and 70) would also provide a more conducive location for viewing Elliott Bay and the landforms on the west side of Puget Sound.

The biggest changes would be in Zones 1 (Pioneer Square/Washington Street Boat Landing Zone) and 4 (Seattle Aquarium/Park Zone) discussed below.

6.2.3.1 Waterfront Bicycle and Pedestrian Path

As in Alternative A, the multipurpose pathway would be extended two blocks from Clay Street to Broad Street. The first block, from Clay Street to Vine Street would be on the east side of Alaskan Way. At Vine, the path would cross to the west side of Alaskan Way where it would continue to Broad Street and connect to the multipurpose path through Olympic Sculpture Park and Myrtle Edwards Park.

6.2.3.2 Waterfront Promenade

There would be limited changes to the Waterfront Promenade as a result of Alternative B. The sidewalk would generally be in the same location and of similar width as today except in Zone 4 (Seattle Aquarium/Park Zone) where the main sidewalk would be located east of its current location and along the eastern edge of the “Water Plaza” (Option 1) or “Land Plaza” (Option 2). Walkways linking the main sidewalk to the Seattle Aquarium and alongside the Seattle Aquarium would be provided as well, providing overall pedestrian accessibility similar to today. A continuous walkway on the west side of Alaskan Way would be provided under Option 2. Access to parks and recreational spaces would continue

and enjoyment of activities such as walking and viewing occur simultaneously.. Open water views to the west would be similar to existing conditions. The addition of riparian plantings at various locations along the seawall would add visual interest.

6.2.3.3 Washington Street Boat Landing

The Washington Street Boat Landing pergola would be restored as part of the project. Informal public access for viewing the new intertidal habitat bench area could be provided. To the north of the boat landing, steps and a boardwalk (Option 1) or boulders (Option 2), may be added for seating, limited physical access to, and viewing of, the new intertidal habitat bench. The other major change in this zone would be the addition of short-stay boat moorage, connected to the historic Washington Street Boat Landing via a new gangway. This amenity would provide access for powered and non-powered watercraft to dock a short distance from Pioneer Square and the central waterfront piers. The Washington Street Boat Landing structure could be located up to 15 feet west of its current location with an expanded pedestrian plaza on the east side. The Boat Landing would continue to provide some seating and views of the water and mountains to the west.

6.2.3.4 Colman Dock Ferry Terminal (Shoreline Public Access)

Access to existing designated public access areas at Colman Dock would continue to be provided.

6.2.3.5 Fire Station No. 5 (Shoreline Public Access)

Access to the existing designated public access area for harbor viewing would continue to be provided.

6.2.3.6 Pier 54 (Shoreline Public Access)

The public plaza, art installation and public access area would continue to be accessible as a result of the project. An enhanced viewpoint would be added between Piers 54 and 55.

6.2.3.7 Pier 55 (Public Access to Blake Island/Tillicum Village)

Regular boat services from Pier 55 to Blake Island State Park would continue to be accessible. On-street parking and bus loading zones would remain available.

6.2.3.8 Piers 55 and 56 (Shoreline Public Access)

Public access areas at these two piers would continue to be accessible, as would the public seating between the piers and at the end of Pier 56.

6.2.3.9 Pier 57 (Shoreline Public Access)

All public access areas at this pier would continue to be accessible. Seating steps and a viewpoint would be added between Piers 56 and 57, providing additional passive viewing opportunities.

6.2.3.10 Waterfront Park

Waterfront Park, including art work within the park, would continue to be accessible upon completion of the EBSP. The new seawall would remain independent of the structures on which Waterfront Park sits, allowing any reconstruction or new park facility to occur independent of the seawall.

6.2.3.11 Pier 59 and Seattle Aquarium

Public access on Pier 59 along portions of the south and north sides of the Seattle Aquarium would continue to be provided. Access to the Seattle Aquarium itself would continue to be provided. Zone 4's wall setback could provide increased public space around the Seattle Aquarium. The "Water Plaza" (Option 1) and "Land Plaza" (Option 2) would provide different visual experiences for pedestrians. Option 1 would provide the opportunity for viewing tide pools and aquatic life below in conjunction with the Seattle Aquarium's educational endeavors. The existing open water area adjacent to the Seattle Aquarium could be covered for additional pedestrian plaza space under Option 2. See discussion in Section 6.2.3.2, Waterfront Promenade, for additional details.

Service vehicles would still be able to access the Seattle Aquarium facility over pile-supported bridges under either Option 1 or 2. Alternative B continues to provide flexibility for future expansion of the Seattle Aquarium, though Option 1 could be viewed as more limiting than Option 2 given that the creation of new aquatic habitat would be difficult to reverse in the future if that were the direction that the Seattle Aquarium would want to pursue.

6.2.3.12 Pier 62/63

Access to the passive, view-oriented park at Pier 62/63 would remain similar to what is there today as the shift of the wall and main pedestrian sidewalk to the east would transition back to the more typical existing sidewalk profile at the south end of Pier 62/63. The location and proximity of the seawall would have no adverse impact on future plans for the pier, especially related to potential Seattle Aquarium expansion.

6.2.3.13 Pier 66, Shoreline Public Access

Public facilities would continue to be accessible. Sidewalk widths would be similar to today and parking and loading zones for serving the cruise ships would remain consistent with what is there today.

6.2.3.14 Edgewater Hotel (Shoreline Public Access)

The public waterfront viewing area would remain accessible.

6.2.3.15 Pier 69 (Shoreline Public Access)

Public access for views and public fishing would remain accessible. Access to the Victoria Clipper would remain as it is today.

6.2.3.16 Pier 70 (Shoreline Public Access)

Public access areas would remain accessible.

6.2.3.17 Olympic Sculpture Park

The extension of the Waterfront Bicycle and Pedestrian Path from Vine Street to Broad Street would improve bicycle and pedestrian access to Olympic Sculpture Park. No other changes in access are proposed.

6.2.3.18 Lake to Bay Loop Trail

The extension of the Waterfront Bicycle and Pedestrian Path to Broad Street would facilitate a direct tie in to the Lake to Bay Loop Trail.

6.2.3.19 Green Streets

The five Green Streets discussed in Section 4.2.2 would not be precluded by this alternative.

6.2.3.20 Public Art

All public art discussed in Section 4.2.3 would remain accessible under this alternative.

6.2.3.21 Indirect Effects

No indirect construction effects related to parks and recreational facilities have been identified.

6.2.4 Alternative C

New viewpoints between some piers (between Piers 48 and 50, 54 and 55, 56 and 57, 60 and 62/63, overlooking the Bell Harbor Marina, between Piers 66 and 67, 67 and 69, and 69 and 70) would provide a more conducive location for viewing Elliott Bay and the landforms on the west side of Puget Sound.

Effects of Alternative C to specific parks and recreational facilities would be similar to those of Alternative B with three exceptions: (1) in Zone 1 there would not be short-stay boat moorage, (2) the Washington Street Boat Landing pergola would remain in its existing location, and (3) no steps or artificial structures are proposed for viewing or access to the beach. In Zone 4 (Waterfront Park/Aquarium), the general effects would be similar to those discussed for Alternative A. There is a sidewalk continuously adjacent to Waterfront Park and to the main entrance of the Seattle Aquarium.

6.2.4.1 Waterfront Bicycle and Pedestrian Path

As in Alternative A, the multipurpose pathway would be extended two blocks from Clay Street to Broad Street. The first block, from Clay Street to Vine Street would be on the east side of Alaskan Way. At Vine Street, the path would cross to the west side of Alaskan Way where it would continue to Broad Street and connect to the multipurpose path through Olympic Sculpture Park and Myrtle Edwards Park.

6.2.4.2 Waterfront Promenade

There would be limited changes to the Waterfront Promenade as a result of Alternative C. The sidewalk would generally be in the same location as today and of similar width. Access to parks and recreational spaces would continue, including activities such as walking and viewing. Open water views to the west

would be similar to existing conditions. The addition of riparian plantings at various locations along the seawall would add visual interest.

6.2.4.3 Washington Street Boat Landing

The Washington Street Boat Landing pergola would be restored as part of the project. Informal public access for viewing the new intertidal habitat bench area could be provided. The Washington Street Boat Landing structure could be located up to 15 feet west of its current location with an expanded pedestrian plaza on the east side. The boat landing would continue to provide some seating and views of the water and mountains to the west.

6.2.4.4 Colman Dock Ferry Terminal (Shoreline Public Access)

Access to existing designated public access areas at Colman Dock would continue to be provided.

6.2.4.5 Fire Station No. 5 (Shoreline Public Access)

Access to the existing designated public access area for harbor viewing would continue to be provided.

6.2.4.6 Pier 54 (Shoreline Public Access)

The public plaza, art installation and public access area would continue to be accessible as a result of the project. An enhanced viewpoint would be added between Piers 54 and 55.

6.2.4.7 Pier 55 (Public Access to Blake Island/Tillicum Village)

Regular boat services from Pier 55 to Blake Island State Park would continue to be accessible. On-street parking and bus loading zones would remain available.

6.2.4.8 Piers 55 and 56 (Shoreline Public Access)

Public access areas at these two piers would continue to be accessible, as would the public seating between the piers and at the end of Pier 56.

6.2.4.9 Pier 57 (Shoreline Public Access)

All public access areas at this pier would continue to be accessible. Seating steps and a viewpoint would be added between Piers 56 and 57, providing additional passive viewing opportunities.

6.2.4.10 Waterfront Park

Waterfront Park, including art work within the park, would continue to be accessible upon completion of the EBSP. The new seawall would remain independent of the structures on which Waterfront Park sits, allowing any reconstruction or new park facility to occur independent of the seawall.

6.2.4.11 Pier 59 and Seattle Aquarium

Public access on Pier 59 along portions of the south and north sides of the Seattle Aquarium would continue to be provided. Access to the Seattle Aquarium itself would continue to be provided at existing

locations. The relationship of the seawall and pedestrian sidewalk to the Seattle Aquarium would remain as it is today and provide flexibility to the Seattle Aquarium for future expansion.

Parking and bus loading zones would be similar to that provided today.

6.2.4.12 Pier 62/63

Access to the passive, view-oriented park at Pier 62/63 would remain as today. The location and proximity of the seawall, similar to what it is today, should have no adverse impact on future plans for the pier, especially related to potential Seattle Aquarium expansion.

6.2.4.13 Pier 66, Shoreline Public Access

Public facilities would continue to be accessible. Sidewalk widths would be similar to today and parking and loading zones for serving the cruise ships would remain consistent with what is there today.

6.2.4.14 Edgewater Hotel (Shoreline Public Access)

The public waterfront viewing area would remain accessible.

6.2.4.15 Pier 69 (Shoreline Public Access)

Public access for views and public fishing would remain accessible. Access to the Victoria Clipper would remain as it is today.

6.2.4.16 Pier 70 (Shoreline Public Access)

Public access areas would remain accessible.

6.2.4.17 Olympic Sculpture Park

The extension of the Waterfront Bicycle and Pedestrian Path from Vine Street to Broad Street would improve bicycle and pedestrian access to Olympic Sculpture Park. No other changes in access are proposed.

6.2.4.18 Lake to Bay Loop Trail

The extension of the Waterfront Bicycle and Pedestrian Path to Broad Street would facilitate a direct tie in to the Lake to Bay Loop Trail.

6.2.4.19 Green Streets

The five Green Streets discussed in Section 4.2.2 would not be precluded by this alternative.

6.2.4.20 Public Art

All public art discussed in Section 4.2.3 would remain accessible under this alternative.

6.2.5 Indirect Effects

No indirect construction effects related to parks and recreational facilities have been identified.

6.2.6 Mitigation Measures

6.2.6.1 Alternative A

Project staff would work closely with the Seattle Parks and Recreation and the Seattle Aquarium to make sure that the project design provides flexibility in any future redevelopment or expansion of Waterfront Park, Pier 62/63, and the Seattle Aquarium.

6.2.6.2 Alternative B

Mitigation for loss of parking and loading zones in Zone 3 (Central Piers) is discussed in the Transportation Discipline Report (SDOT 2012e).

Project staff would work closely with the Seattle Parks and Recreation and the Seattle Aquarium to make sure that the project design provides flexibility in any future redevelopment or expansion of Waterfront Park, Pier 62/63 and the Seattle Aquarium.

6.2.6.3 Alternative C

Project staff would work closely with the Seattle Parks and Recreation and the Seattle Aquarium to ensure that project design provides flexibility in any future redevelopment or expansion of Waterfront Park, Pier 62/63 and/or the Seattle Aquarium.

This page intentionally left blank.

CHAPTER 7. CONSISTENCY WITH PLANS AND REGULATIONS

7.1.1 Federal Laws and Regulations

7.1.1.1 *Clean Water Act (Section 401 and 404) (Pub. L. No. 92-500)*

A number of project elements including piles, a temporary containment wall, removal of riprap, and the habitat improvements (habitat benches, subtidal reef and kelp beds, and subtidal substrate enhancements) proposed as part of the project, fall under Sections 401 and 404 of the CWA. Compliance with Sections 401 and 404 is required before dredged or fill material may be discharged into the waters of the United States, including Elliott Bay.

Habitat benches are being developed continuously along the waterfront. The habitat benches are rock structures with a fine-substrate surface placed adjacent to the seawall face in order to construct a shallow nearshore area to serve as a salmon migratory corridor. The benches are designed to be relatively stable and resistant to toe scour at the base of the seawall. Subtidal reefs (under Alternatives A and B) consist of 6-to-12-inch cobbles placed at an elevation ranging between -25 feet and -30 feet NAVD 88. The cobbles would create a substrate upon which kelp plants could attach, thereby promoting the growth of kelp beds along the shoreline. Subtidal substrate enhancement consists of the placement of pea gravel and shell hash at an elevation between -10 feet and -15 feet North American Vertical Datum of 1988 (NAVD88) to provide habitat and cover for juvenile crabs and rockfish.

7.1.1.2 *Rivers and Harbors Act*

A Section 10 permit is required prior to any work in, over, or under navigable waters of the United States, or which could affect the course, location, condition, or capacity of such waters. A Section 10 permit or approval would be sought from USACE. The placement of material for the habitat benches and subtidal substrate enhancement would be designed so as to not interfere with navigation in Elliott Bay or at the slips and piers along the seawall. Temporary access points between Piers 54 and 55 and between Pier 56 and 57 are being considered in Zone 3 for pedestrian, supply, and/or emergency access. Coordination with USACE is ongoing to ensure compliance with the Rivers and Harbors Act.

7.1.1.3 *Coastal Zone Management Act*

Ecology reviews projects under this act and ensures that a project complies with state environmental requirements and permits through the laws in the CZMA Program. King County is one of 15 counties in Washington State's coastal zone. Coordination with Ecology is ongoing.

7.1.2 State and Local Laws and Regulations

7.1.2.1 *Shoreline Management Act*

The City's Shoreline Management Plan was prepared in response to the Washington Shoreline Management Act. All elements of the City's Shoreline Management Plan must be approved by Ecology. The following section discusses the City's Shoreline Management Program and its relationship to the project.

7.1.2.1.1 Seattle Shoreline Master Program

The discussion of the applicability of the Seattle Shoreline Master Program is based on the Program as of August 2012. It should be noted that the City's Shoreline Master Program is being revised, and City Council action regarding the Shoreline Master Program is expected in fall 2012. A supplemental memorandum to this Discipline Report would be prepared after final approval of the updated Shoreline Master Program.

The City's Shoreline Master Program goals and policies are codified in the City's Comprehensive Plan. The three major policy goals are:

1. Preferred Shoreline Uses: Establishes a preference for uses that are water-oriented and appropriate for the environmental context (such as port facilities, shoreline recreational uses, and water-dependent businesses).
2. Environmental Protection: Requires protections for shoreline natural resources, including "... the land and its vegetation and wildlife, and the water of the state and their aquatic life ..." to ensure no net loss of ecological function.
3. Public Access: Promotes public access to shorelines by mandating inclusion of a public access element in local Shoreline Master Programs and requiring provisions to ensure that new development maintains public access features.

The EBSP complies with all three policy goals.

The Shoreline Code (SMC 23.60) applies to lands within 200 feet of the ordinary high water line in all directions (upland and waterward). The ordinary high water line is generally located at the seawall. In those instances where the proposed action would result in the wall being pulled landward 10 to 75 feet from the existing wall location, property not currently within the shoreline district could come under the jurisdiction of the Shoreline Code. The state legislature passed an amendment in 2009 (House Bill 2199) to establish relief procedures for instances in which a shoreline restoration project within a UGA creates a shift in ordinary high water, and this shift creates a use hardship for properties subject to new or extra regulation. Nearly all lots on the east side of Alaskan Way are within 200 feet of the existing shoreline. Under the maximum proposed seawall setback of 75 feet for Alternative B in Zone 4, no additional lots appear to be subject to the Shoreline Code, though additional portions of existing lots within the shoreline districts could be subject to new or extra regulations of the code.

7.1.2.2 Washington Hydraulic Code

Coordination with WDFW has been initiated and is ongoing for the project. The City would apply for a Hydraulic Project Approval and comply with the terms of that approval for work in Elliott Bay. The City has been coordinating with WDFW as the habitat improvements have been developed and would continue the coordination effort as the design is refined.

7.1.2.3 Aquatic Land Use Authorization

The seawall itself is not on DNR land. The seawall is in closest proximity to DNR land at its north end, near Pier 70; farther south along the seawall, DNR lands are located farther waterward. Most of the

habitat improvements (subtidal substrate enhancements) would likely need to be installed on DNR land. DNR has expressed interest in collaborating to work toward alternatives that satisfy DNR and USACE interests (Derrick Toba, Assistant Division Manager Shoreline District Aquatics, DNR, letter to Jacalen Prinz, Project Manager, USACE, June 26, 2012). Coordination with DNR has been initiated and is ongoing for the project.

7.1.2.4 Puget Sound Regional Council VISION 2040 and Transportation 2040

The restoration of the Elliott Bay Seawall would support the maintenance and preservation of the Alaskan Way surface street and utility infrastructure, support access to the ferry system, support the economy of the waterfront business community, and provide habitat improvements, including a migratory fish corridor. All of these elements are consistent with goals and policies enumerated in VISION 2040 and Transportation 2040.

Among the policies that the project supports are:

- MPP-En-10: Preserve and enhance habitat to prevent species from inclusion on the Endangered Species List and to accelerate their removal from the list.
- MPP-En-11: Identify and protect wildlife corridors both inside and outside the urban growth area.
- MPP-En-12: Preserve and restore native vegetation to protect habitat, especially where it contributes to the overall ecological function and where invasive species are a significant threat to native ecosystems.
- MPP-Ec-6: Ensure the efficient flow of people, goods, services, and information in and through the region with infrastructure investments, particularly in and connecting designated centers, to meet the distinctive needs of the regional economy.
- MPP-T-2: Protect the investment in the existing system and lower overall life-cycle costs through effective maintenance and preservation programs.
- MPP-T-8: Protect the transportation system against disaster, develop prevention and recovery strategies, and plan for coordinated responses.
- MPP-T-16: Promote and incorporate bicycle and pedestrian travel as important modes of transportation by providing facilities and reliable connections.

7.1.2.5 Seattle Comprehensive Plan

The Seattle Comprehensive Plan includes several overarching policies that apply to the project:

- CFG1: Provide capital facilities that would serve the most pressing needs of the greatest number of Seattle citizens, and that would enable the City to deliver services efficiently to its constituents.
- CFG2: Preserve the physical integrity of the City's valuable capital assets and gradually reduce the major maintenance backlog.

- CFG3: Make capital investments consistent with the vision of the Comprehensive Plan, including the urban village strategy.
- CFG9: Encourage the protection of City-owned historic facilities when planning for alteration or maintenance of these facilities.

A more detailed discussion of the Seattle Comprehensive Plan goals and policies pertinent to the project follows.

7.1.2.5.1 Shoreline Use Goals and Policies

- LUG43: Protect those areas of shoreline that are geologically dangerous or fragile, or biologically fragile.

The City and its contractors would utilize BMPs during construction to protect geologically and biologically fragile areas. The habitat elements of the three build alternatives are also designed to enhance the biological conditions along the waterfront for fish-migration and ecosystem-productivity purposes.

7.1.2.5.2 Shoreline Access Goals and Policies

- LUG44: Provide for the optimum amount of public access—both physical and visual—to the shorelines of Seattle.
- LUG45: Preserve and enhance views of the shoreline and water from upland areas where appropriate.
- LU235: Increase opportunities for substantial numbers of people to enjoy the shorelines, by permitting non-water-dependent uses providing public access to locate in waterfront areas less suited for water-dependent uses, and by requiring public access on public property.
- LU236: Promote public enjoyment of the shorelines through public access standards by requiring improvements that are safe, well designed, and offer adequate access to the water.
- LU237: Except for single-family residences, maintain standards and criteria for public access and private use of publicly owned or controlled shorelines to achieve the following:
 1. Provide linkages between shoreline public facilities via trails, paths, etc., to connect with terminal boating and other recreational facilities.
 4. Require public agencies such as the City, Port of Seattle, and King County Metro, etc., to provide public access opportunities at new shorelines facilities and encourage these agencies to provide similar opportunities in existing facilities.
 5. Provide standards and criteria for views and visual access from upland and shoreline areas.
 6. Give priority to the operating requirements of the water-dependent and water-related uses over preservation of views in those environments where water-dependent uses are encouraged.

The three build alternatives are being designed to continue and expand upon the visual and physical public access to the Elliott Bay shoreline. All existing points of pedestrian access to the waterfront would continue under any alternative. In an option available under Alternatives B and C, Zone 1 would provide pedestrian access approaching an intertidal habitat bench. Also, under Alternative B, the “Water Plaza” option in Zone 4 would provide additional views to tide pools and aquatic life. Finally, Alternatives B and C would provide new enhanced viewpoints waterward of the existing sidewalk at various locations between piers along the waterfront.

The existing sidewalks along the west side of Alaskan Way would be replaced. The Waterfront Bicycle and Pedestrian Path would be extended two blocks to Broad Street, connecting it to the trail in Olympic Sculpture Park and then on to Myrtle Edwards Park and thereby providing continuous pedestrian and bicycle access along the waterfront.

All protected views from downtown Seattle to Elliott Bay and the west would be maintained and meet code requirements. The Visual Quality Assessment (SDOT 2012m) provides additional detail on view protection.

The project is being designed to allow unfettered access to docks and piers by ferries, boats, and other water-borne vehicles both during construction and upon project completion. The use of barges and other watercraft during construction would be coordinated with pier/dock owners and boat operators to minimize any disruption.

7.1.2.5.3 *Transportation Goals and Policies*

- LUG46: Develop a transportation network that supports and enhances use of and access to the shorelines.
- LU240: Encourage the maintenance and future development of inter-modal commuter ferry services, complementary to other public transportation systems, from both intra-city locations and regional activity centers.
- LU241:
 1. Streets, highways, freeways, and railroads should be located away from the shoreline in order to maximize the area of waterfront lots and minimize the area of upland lots. Streets, highways, freeways, and railroads not needed for access to shoreline lots shall be discouraged in the Shoreline District. A replacement for the State Route 99 Viaduct (only for seawall reconstruction and either a tunnel with a surface roadway or a surface roadway without tunnel) may be located in the Shoreline District because it represents a critical link in the transportation network.
 2. To facilitate expeditious construction in an environmentally and fiscally responsible manner, standards for major state and regional transportation projects should be considered that would allow flexibility in construction staging, utility relocation, and construction-related mitigation and uses, provided that the projects result in no net loss of ecological function.

Existing sidewalks would be restored, the Waterfront Bicycle and Pedestrian Path would be extended two blocks to Broad Street, and Alaskan Way would be rebuilt as part of the project. These actions

would continue to support and enhance public and private uses along the waterfront. The reconstruction of the seawall would also provide a sound structural base for the Alaskan Way surface street as specifically called for in Policy LU241.

The reconstruction of the seawall would support current and future use of vehicular and pedestrian ferry services operated by Washington State Ferries, King County, and the Port of Kingston, as well as Argosy service to Blake Island State Park.

7.1.2.5.4 Conservation Goals and Policies

- LUG48: Preserve, protect and restore areas such as those necessary for the support of wild and aquatic life or those identified as having geological or biological significance.
- LUG49: Ensure that all future uses would preserve and protect environmental systems, including wild and aquatic life.
- LUG50: Ensure continuing scientific study of Seattle shoreline ecosystems.
- LU247: Areas identified as special wildlife or fisheries habitat should be developed only if no reasonable alternative locations exist and then only if the project is designed to minimize and mitigate habitat damage.
- LU248: Require that all commercial, industrial or other high activity uses provide means for treating natural or artificial urban run-off to acceptable standards. Developments with industrial and commercial uses that use or process substances potentially harmful to public health and/or aquatic life shall provide means to prevent, to the extent possible, point and non-point discharge of the harmful substances.
- LU249: Dredging and disposal of dredge materials shall be conducted in a manner that minimizes short and long-term environmental damage.
- LU250: Permit landfill on submerged land that does not create dry land where necessary for a water-dependent or water-related use, for the replacement of the State Route 99 Viaduct (only for seawall reconstruction and either a tunnel with a surface roadway or a surface roadway without tunnel), for the installation of a bridge or utility line, or for wildlife or fisheries habitat mitigation or enhancement. Permit landfill that creates dry land only where necessary for the operation of a water-dependent or water-related use, for the replacement of the State Route 99 Viaduct (only for seawall reconstruction and either a tunnel with a surface roadway or a surface roadway), to repair pocket erosion, or for wildlife habitat mitigation or enhancement. Large amounts of dry land may be created in Lake Union only if specifically approved by the Council for a public park purpose.
- LU251: Identify those areas that have potential for restoration to “natural” conditions, develop standards for the conditions in those areas, and provide incentives for achieving such standards.

A key component of the project’s Purpose and Need Statement is to “improve the degraded ecosystem functions and processes of the Elliott Bay nearshore in the vicinity of the existing seawall.” A number of habitat elements have been included in all three build alternatives to support aquatic life, including habitat benches, light-penetrating surfaces, textured walls, riparian plants and planter boxes, subtidal

reef and kelp beds, and subtidal substrate enhancements. The locations of the habitat improvements take into account natural conditions, including tides and winds.

Care would be taken during construction to minimize harm to the existing aquatic habitat. The currently designated in-water work window is from August 15 to February 15, but the allowable work windows would be reconfirmed during the permitting process. Other mitigation would be implemented to minimize construction-related sediment contamination, water-borne contaminants, and fill materials being removed from behind the existing seawall.

In-water fill would generally be limited to habitat enhancements, such as habitat benches, subtidal reefs and kelp beds (Alternatives A and B), and subtidal substrate enhancements. Dredging would be limited to the removal of riprap and contaminated sediments in limited locations, where necessary, for seawall or habitat construction. Again, in-water work would be timed to be outside of main migratory periods and would be done in a manner to minimize ancillary negative effects on habitat and water quality. See the Fish, Wildlife, and Vegetation; Water Resources; and Contaminated Materials Discipline Reports (SDOT 2012g, 2012h, and 2012f, respectively) for additional discussion.

7.1.2.5.5 *Economic Development Goals and Policies*

- LUG51: Encourage economic activity and development of water-dependent uses by supporting the retention and expansion of existing water-dependent businesses and planning for the creation of new developments in areas now dedicated to such use.
- LUG52: Allow a multi-use concept of development, provided that the major use is water-dependent and that it provides public access to the shoreline yet maintains the economic viability of the use.
- LU254: Concentrate industrial and commercial shoreline uses by supporting the retention and expansion of existing water-dependent businesses, and planning for the creation of new developments in areas now dedicated to such use.

The three build alternatives support existing and future uses along the waterfront, including water-dependent businesses. A reconstructed seawall with a restored roadway and sidewalks would provide stable access to waterfront piers and provide continuous pedestrian and vehicular access along the waterfront. Measures would be taken during construction to reduce effects to businesses, including a likely construction shut-down from Memorial Day weekend through Labor Day weekend. A full analysis of economic effects and proposed mitigation can be found in the Economics Discipline Report (see SDOT 2012b).

7.1.2.5.6 *Recreation Goals and Policies*

- LU258: Allow for increased opportunity for the public to enjoy water-dependent recreation including boating, fishing, swimming, diving, and enjoyment of views.
- LU260: Provide for recreational boating facilities including terminals, moorage, and service facilities on publicly-owned land and encourage the provision of such facilities on private property, if the environmental impact is acceptable.

- LU262: Explore alternative means (other than acquisition) to provide public recreation at the shoreline and on the water.

Short-stay boat moorage is proposed under Alternative B at Washington Street Boat Landing, restoring a use that has been provided at this location in the past. Current views along the waterfront would remain intact under all alternatives, while additional viewing points, especially at between-pier locations, are proposed under Alternatives B and C. Public-access points would provide many of the view opportunities along the waterfront.

7.1.2.5.7 History, Culture, Restoration and Enhancement Goals and Policies

- LUG58: Upgrade and/or beautify the public shoreline.
- LU264: Support and encourage the restoration, preservation and maintenance of areas of the shoreline having significant historical or cultural significance, and a program for shoreline restoration and beautification.

Care is being taken during design to complement the historic elements along the waterfront, especially the historic piers. Replication or reuse of the existing seawall railing (an historic feature) is under consideration as one element of the seawall design. Riparian plantings (included in all three build alternatives) and new land- or water-oriented elements (Alternative B, Zone 4) would result in upgrades and beautification along the public shoreline. See the Cultural, Historic, and Archaeological Resources Discipline Report for additional details (SDOT 2012k).

7.1.2.5.8 Area Objectives

- LUG60: Recognize the unique opportunities in different areas of our shorelines to accommodate different types of water-dependent businesses and shoreline recreation, and to protect and enhance natural areas and views of the water.

The EBSP alternatives reflect the different uses along the Central and North Seawall and protect and enhance natural areas and water views.

7.1.2.5.9 Other Seattle Comprehensive Plan Goals and Objectives

- Shoreline Goal DT-G8: Encourage revitalization of the Harborfront in order to strengthen maritime activities, maintain historic characteristics, and enhance opportunities for public access consistent with the shorelines goals and policies established in the Comprehensive Plan Land Use Element.
- Land Use Regulation Policies for Downtown Harborfront-1 and Shoreline Environment (DH-1): Waterfront lots and adjacent harbor areas within the Urban Harborfront Shoreline Environment established in the Seattle Shorelines Master Program. The DH-1 land use district, in conjunction with the Seattle Shorelines Master Program, is intended to:
 - Encourage economically viable marine uses to meet the needs of waterborne commerce;
 - Facilitate the revitalization of downtown’s waterfront;

- Provide opportunities for public access and recreational enjoyment of the shoreline;
 - Preserve and enhance elements of historic and cultural significance; and
 - Preserve views of Elliott Bay and the land forms beyond.
- Urban Design Policies DT-UDP8: Designate as view corridors street segments providing street-level views of important natural features, which may include views to Elliott Bay, West Seattle, Mount Rainier, and the Olympic Mountains. Protect view corridors through regulations controlling actions within the public right-of-way, as well as through reasonable development standards for abutting property, consistent with Policy UD 9: View Corridor Setbacks. Consider impacts on designated view corridors in the evaluations of street vacations and encroachments.
 - Open Space Policies DT-OSP2: Support the addition of major new public open spaces to the downtown open space network to meet the needs of downtown’s growing employment and residential populations. Promote new open space development consistent with the Comprehensive Plan’s open space goals and adopted policies of downtown neighborhood plans. Open space projects to be considered for potential development in the future include the following:
 - Harborfront Open Space: To improve public access and enjoyment of the shoreline, and to better integrate east/west pedestrian connections between the Harborfront promenade and the rest of downtown by developing open space where appropriate opportunities exist along the waterfront.
 - Downtown Neighborhood (Urban Center Village) Goals and Policies: Belltown Pedestrian Environment Goals (Comprehensive Plan p. 8.73): A neighborhood with continued pedestrian and bicycle access to the waterfront and Myrtle Edwards Park, including at-grade access.

The EBSF is being planned to support all of the above downtown neighborhood policies, including the revitalization of the waterfront, encouraging marine uses, providing public access and open spaces, and providing continued at-grade pedestrian and bicycle access along the waterfront.

7.1.2.6 Downtown Urban Center Neighborhood Plan

The project is consistent with the following Downtown Urban Center Neighborhood Plan goals:

- Goal D: Urban Form – Public and private development shall make a positive contribution to the downtown physical environment by enhancing the relationship of downtown to its spectacular setting of water, hills, and mountains.
- Goal J: Shoreline – The City shall actively work to revitalize the Harborfront in order to strengthen maritime activities and enhance opportunities for public access, consistent with the shorelines goals and policies established in the Comprehensive Plan Land Use Element.

7.1.2.7 Pioneer Square Neighborhood Plan

The project is consistent with the following key objectives of the Pioneer Square Neighborhood Plan:

- Connect Pioneer Square with the waterfront by creating destinations that attract people to the south waterfront.

- Revive Washington Street Boat Landing and restore it to its position as the centerpiece of the south waterfront. This historic pier is the key relic that connects Pioneer Square and Seattle to its waterfront history.
- Redesign waterfront parks to allow better access to the water, provide facilities for recreation, and provide places to experience the unique port activity. This is a productive urban waterfront that public space design should celebrate.

All build alternatives include the restoration of Washington Street Boat Landing. Alternative B also would replace the pergola up to 15 feet waterward and restore short-stay boat moorage to the operation of the boat landing. Restored sidewalks and the Waterfront Bicycle and Pedestrian Path also provide better access for pedestrians and better connect the waterfront with adjacent neighborhoods, including Pioneer Square.

7.1.2.8 Commercial Core Neighborhood Plan

The project is consistent with the goals and policies of the Commercial Core Neighborhood Plan by providing essential infrastructure that supports commercial, residential, and transportation uses in the neighborhood. Specifically, the project supports critical waterfront components enumerated in the Commercial Core Neighborhood Plan, including development along Alaskan Way piers, Port of Seattle Development Plans, views of the water, pedestrian access to the waterfront area, opportunities to access the water itself, waterfront-transportation connections, and waterfront connections between downtown neighborhoods.

7.1.2.9 Belltown Neighborhood Plan

One of the policies of the Belltown Neighborhood Plan is to “enhance pedestrian and bicycle access to the waterfront and Myrtle Edwards Park through such means as encouraging development in this area to provide associated street improvements and amenities that enhance this connection.” The project supports this policy by proposing to extend the Waterfront Bicycle and Pedestrian Path from its current terminus at Vine Street to Broad Street where it would connect to the multi-use trail through Olympic Sculpture Park and on to Myrtle Edwards Park.

7.1.2.10 Concept Design and Framework Plan for Seattle’s Central Waterfront

The project build alternatives have been developed to reflect the Guiding Principles in the Concept Design and Framework Plan for Seattle’s Central Waterfront (see Central Waterfront Committee 2012a). These principles include environmental sustainability, authenticity and identity, destination and movement, balance and integration, diversity and flexibility, access and connection, and economic development. By replacing a key component of urban infrastructure along Elliott Bay, the project build alternatives provide a range of options to provide maximum flexibility for future improvements along the central and north waterfront.

EBSP staff have been working closely with Waterfront Seattle staff and consultants to maximize flexibility for future development while ensuring that the reconstructed seawall would protect utilities, transportation networks, businesses, and residences for decades to come.

The build alternatives have been designed to be supportive of the Guiding Principles for Waterfront Seattle. The seven principles are to:

- Create a waterfront for all;
- Put the shoreline and innovative, sustainable design at the forefront;
- Reconnect the city to its waterfront;
- Embrace and celebrate Seattle’s past, present and future;
- Improve access and mobility;
- Create a bold vision that is adaptable over time; and
- Develop consistent leadership from concept to construction to operations.

Replacing the seawall would allow the public to continue to access the water’s edge in order to “experience the water itself and the unique geography and ecology of Elliott Bay.” The proposed habitat elements would “improve the natural shoreline ecology while also preserving and enhancing the maritime activities that remain central to the Central Waterfront.” These are both elements of the second Guiding Principal: “Put the shoreline and innovative, sustainable design at the forefront” (Seattle City Council Resolution 31264).

New or expanded public spaces, such as the Water or Land Plaza options in Alternative B, are consistent with the principal of reconnecting the city to its waterfront. Upon completion, the project would provide continued access and mobility along the waterfront and provide the infrastructure (in terms of a new, seismically designed seawall) upon which future improvements to the waterfront can be developed.

7.1.2.11 Transportation-Related Plans and Guidance

The City has a number of plans and policies concerning transportation elements that are pertinent to this project. The analysis of how the proposed project actions respond to these plans and policies can be found in the Transportation Discipline Report (SDOT 2012e).

7.1.2.12 Seattle Environmentally Critical Areas Code

Seattle’s Environmentally Critical Area code (SMC 25.09) governs areas of Seattle that provide critical environmental function or that represent particular challenges for development due to geologic or other natural conditions. The goal of Environmentally Critical Area regulations is to effectively protect the contribution of these identified areas to habitat, water quality protection, and public safety, while allowing reasonable development within a growing urban environment.

The project area is within a designated Environmental Critical Area for habitat and liquefaction. Design and construction would be implemented to meet the requirements of the code.

7.1.2.13 Seattle Parks and Recreation Development Plan

Alternatives A and C would support of the Seattle Park’s Development Plan as related to Waterfront Park and Piers 62/63. See individual discussion of these two facilities above. Alternative B would support the Seattle Parks Development Plan as related to Waterfront Park and Piers 62/63, though the creation

of the Water Plaza or Land Plaza in Zone 4 may complicate construction of any future improvements to or expansion of these facilities.

7.1.2.14 Port of Seattle Shoreline Plan

The City would work closely with the Port of Seattle to ensure that necessary access is provided to Port of Seattle facilities during construction of the seawall. In addition, the City would work with the Port of Seattle to maximize opportunities for fish migration along the entire waterfront, including the segment around Bell Harbor Marina and Bell Street Pier Cruise Terminal.

CHAPTER 8. REFERENCES

- Central Waterfront Committee. 2012a. Design Summary: Concept Design and Framework Plan for Seattle's Central Waterfront. Prepared for Central Waterfront Committee, Seattle Department of Transportation, Department of Planning and Development, and Department of Parks and Recreation. Prepared by James Corner Field Operations, CH2MHill, Shields Oblatz Johnsen, Inc., SHoP Architects, Mithun, Berger Partnership, Nelson/Nygaard, Parson Brinkerhoff, Parametrix, EnviroIssues, Creative Time, Mark Dion, Erik Fredericksen, and Tomato. July. Available at: http://waterfrontseattle.org/downloads/Waterfront_Seattle_Design_Summary_July2012.pdf.
- Central Waterfront Committee. 2012b. Strategic Plan for Realizing the Waterfront Seattle Vision. Prepared for the Mayor of Seattle and the Seattle City Council by the Central Waterfront Committee. July. Available at: http://waterfrontseattle.org/downloads/CWC_Strategic_Plan_Final_7-11-12_Web_Version.pdf.
- City of Seattle. 1998. Belltown Neighborhood Plan. Denny Regrade Urban Center Village. Sponsored by the City of Seattle Strategic Planning Office. December. Available at: <http://www.seattle.gov/neighborhoods/mpi/plans/belltown/>.
- City of Seattle. 1999. Seattle Commercial Core Neighborhood Plan Land Use and Urban Design Summary. Prepared by Commercial Core Planning Committee, MAKERS Architecture and Urban Design, Nakano Dennis Landscape Architects and Ravenhurst Development Corporation. Sponsored by the City of Seattle Neighborhood Planning Office and Strategic Planning Office. February. Available at: <http://www.seattle.gov/neighborhoods/mpi/plans/ccore/>.
- City of Seattle. 2007. Seattle Bicycle Master Plan. Available at: <http://www.seattle.gov/transportation/bikemaster.htm>.
- City of Seattle. 2007. Historic Preservation Program: Downtown Historic Resources Survey and Inventory 2007. Results and Searchable Database Available at: http://www.seattle.gov/neighborhoods/preservation/survey_and_inventory_07.htm.
- City of Seattle. 2010. Center City Public Realm Strategy, Seattle. September 2010 v3, Draft for Discussion. Available at: http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@proj/documents/web_informati_onal/dpdp020498.pdf.
- City of Seattle. 2011. Seattle Right-of-Way Improvements Manual. Last revised May 16, 2011. Available at: http://www.seattle.gov/transportation/rowmanual/manual/table_of_contents.asp.
- City of Seattle Department of Design, Construction, and Land Use. 1999. Design Review: Guidelines for Downtown Development. Available at: http://www.seattle.gov/dpd/Planning/Design_Review_Program/Design_Guidelines/DPD_00154_0.asp.
- City of Seattle Department of Planning and Development. 2005. City of Seattle Comprehensive Plan: Toward a Sustainable Seattle. First Adopted July 25, 1994 by Ordinance 117221. Available at: http://www.seattle.gov/dpd/Planning/Seattle_s_Comprehensive_Plan/ComprehensivePlan/default.asp.
- City of Seattle Department of Planning and Development. 2012. Generalized Zoning. <http://www.seattle.gov/dclu/Research/gis/webplots/smallzonemap.pdf>. January 27.

- City of Seattle Downtown Urban Center Planning Group. 1999. The Downtown Urban Center Neighborhood Plan, City of Seattle. April 12. Available at:
<http://www.seattle.gov/neighborhoods/npi/plans/downtown/Section1.pdf>.
- City of Seattle, Seattle Parks and Recreation. 2006. Central Waterfront Master Parks Plan. Final Environmental Impact Statement. September. Available at:
<http://www.seattle.gov/parks/maintenance/Pier62-63/#eis>.
- City of Seattle, Seattle Parks and Recreation. 2008. Building for Tomorrow, Today. Seattle Parks and Recreation Strategic Action Plan: 2009–2013. Prepared for Seattle Parks and Recreation by Berk & Associates, Seattle, Washington. September 1. Available at:
<http://www.seattle.gov/parks/Publications/ParksActionPlan.htm>.
- City of Seattle, Seattle Parks and Recreation. 2010. Building for Tomorrow, Today. May 3, 2010 update to Building for Tomorrow, Today. Seattle Parks and Recreation Strategic Action Plan: 2009–2013. Available at: <http://www.seattle.gov/parks/Publications/ParksActionPlan.htm>.
- City of Seattle, Seattle Parks and Recreation. Seattle’s Parks and Recreation 2011 Development Plan. Adopted November 28, 2011 Resolution 31336. Available at:
http://seattle.gov/parks/Publications/Development/plan_2011_ADOPTED.pdf.
- Downtown Seattle Association and Metropolitan Improvement District. 2010. Economic Profile: Transportation. Available at:
http://downtownseattle.com/pdf_files/resources/Transportation.pdf.
- Ecology (Washington State Department of Ecology). 2011. Introduction to the Shoreline Management Act. http://www.ecy.wa.gov/programs/sea/sma/st_guide/intro.html.
- FHWA (Federal Highway Administration), WSDOT (Washington Department of Transportation), and SDOT (Seattle Department of Transportation). 2004. SR 99: Alaskan Way Viaduct and Seawall Replacement Project, Draft Environmental Impact Statement, including appendices. Prepared by Parsons Brinkerhoff Quade and Douglas. Seattle, Washington.
- FHWA, WSDOT, and SDOT. 2006. SR 99: Alaskan Way Viaduct and Seawall Replacement Project, Supplemental Draft Environmental Impact Statement, including appendices. Prepared by Parsons Brinkerhoff Quade and Douglas. Seattle, Washington.
- FHWA, WSDOT, and SDOT. 2010. Alaskan Way Viaduct Replacement Project, 2010 Supplemental Draft Environmental Impact Statement and Draft Section 4(f) Evaluation. Submitted by Parsons Brinkerhoff Quade, Seattle, Washington. October.
- Gehl Architects. 2009. Downtown Seattle 2009, Public Spaces & Public Life. Prepared by Gehl Architects, Copenhagen, Denmark and International Sustainability Institute, Seattle, Washington, for City of Seattle Department of Transportation and Department of Planning and Development.
- King County. 2010. 2008 King County Comprehensive Plan with 2010 Update. Adopted October 6, 2008, Updated October 27, 2010. Available at:
http://www.kingcounty.gov/property/permits/codes/growth/CompPlan/2008_2010update.aspx.
- King County. 2011. GIS Based Parcel Data Property Reports. Available at:
<http://www.kingcounty.gov/operations/GIS/Maps.aspx>.
- Pioneer Square Planning Committee. 1998. Pioneer Square Neighborhood Plan. March. Available at:
<http://www.seattle.gov/neighborhoods/npi/plans/psquare/>.

- Port of Seattle. 2007. Seaport Shoreline Plan. Prepared by Seaport Planning Group and Ann Farr Consulting. December.
- Port of Seattle. 2009. Discover Seattle's Hidden Gems, Port of Seattle Parks & Recreation Access Guide. Available online at: <http://viewer.zmags.com/publication/8df498f8#/8df498f8/5>.
- PSRC (Puget Sound Regional Council). 2009. Vision 2040: The Growth Management, Environmental, Economic, and Transportation Strategy for the Central Puget Sound Region. Adopted by the PSRC General Assembly April 24, 2008. Amended by the PSRC Executive Board May 28, 2009. Available at: <http://psrc.org/growth/vision2040>.
- PSRC. 2010. Transportation 2040: Toward a Sustainable Transportation System. May 20. Available at: <http://www.psrc.org/transportation/t2040/t2040-pubs/final-draft-transportation-2040/>.
- SDOT (Seattle Department of Transportation). 2003. Center City Circulation Report. December. Available at: <http://www.seattle.gov/transportation/ppmpcentercity.htm>.
- SDOT. 2004. Center City Access Strategy: A Transportation Vision for Growth and Access. Available at: <http://www.seattle.gov/transportation/centercityaccess.htm>.
- SDOT. 2009. Seattle Pedestrian Master Plan. Available at: http://www.seattle.gov/transportation/pedestrian_masterplan/.
- SDOT. 2011. Elliott Bay Seawall Project Land Use, Shorelines, and Parks and Recreation Methodology Technical Memorandum. Final. Prepared by Tetra Tech, Inc. Seattle, Washington. January.
- SDOT. 2012a. Elliott Bay Seawall Project Air Quality Discipline Report. Prepared by Tetra Tech, Inc. Seattle, Washington.
- SDOT. 2012b. Elliott Bay Seawall Project Economics Discipline Report. Prepared by Tetra Tech, Inc. Seattle, Washington.
- SDOT. 2012c. Elliott Bay Seawall Project Noise and Vibration Discipline Report. Submitted by Tetra Tech, Inc. Prepared by LPES, Inc. Engineering and Planning.
- SDOT. 2012d. Elliott Bay Seawall Project Public Services and Utilities Discipline Report. Prepared by Tetra Tech, Inc. Seattle, Washington.
- SDOT. 2012e. Elliott Bay Seawall Project Transportation Discipline Report. Submitted by Tetra Tech, Inc. Prepared by Fehr and Peers, Inc. Seattle, Washington.
- SDOT. 2012f. Elliott Bay Seawall Project Contaminated Materials Discipline Report. Submitted by Tetra Tech, Inc. Prepared by Floyd|Snider, Inc. Seattle, Washington.
- SDOT. 2012g. Elliott Bay Seawall Project Fish, Wildlife and Vegetation Discipline Report. Prepared by Tetra Tech, Inc. Seattle, Washington.
- SDOT. 2012h. Elliott Bay Seawall Project Water Resources Discipline Report. Prepared by Herrera Environmental Consultants, Inc. Seattle, Washington.
- SDOT. 2012i. The Seattle Department of Transportation 2012 Action Agenda. Available at: <http://www.seattle.gov/transportation/docs/SDOTActionAgenda2812.pdf>.
- SDOT. 2012j. City of Seattle Department of Transportation Transit Master Plan. Final Summary Report and appendices. April. Available at: <http://www.seattle.gov/transportation/docs/tmp/final/TMPFinalSummaryReportandAppendices.pdf>.

- SDOT. 2012k. Elliott Bay Seawall Project Cultural, Historic, and Archaeological Resources Discipline Report. Submitted by Tetra Tech, Inc. Prepared by SWCA Environmental Consultants. Seattle, Washington.
- SDOT. 2012l. Elliott Bay Seawall Project Geology and Soils Discipline Report. Submitted by Tetra Tech, Inc. Prepared by Shannon and Wilson, Inc. Seattle, Washington.
- SDOT. 2012m. Elliott Bay Seawall Project Visual Quality Assessment Discipline Report. Submitted by Tetra Tech, Inc. Prepared by JA Brennan Associates, PLLC. Seattle, Washington.
- Seattle Aquarium. 2011. Seattle Aquarium Strategic Plan 2011–2030. Available at: <http://www.seattleaquarium.org/document.doc?id=1366>.
- USACE (United States Army Corps of Engineers). 2008. Existing Conditions Report, Alaskan Way Seawall Replacement Project Feasibility Study. Prepared for U.S. Army Corps of Engineers Seattle District. October.
- USACE. 2011. Elliott Bay Seawall, Washington Coastal Storm Damage Reduction Study, Seattle, King County, Washington, Feasibility Scoping Meeting Read-Ahead Report. February.
- Washington State Ferries. 2011. Traffic Statistics Rider Segment Report, January 1, 2010 through December 31, 2010.