Lower Duwamish River Natural Resource Damage Assessment and Restoration: Bluefield Holding Inc.'s Project One, King County, Washington

Draft Restoration Plan/Environmental Assessment
November 2020

(Photo credit: Michael Carlson, FWS)

Prepared by the Elliott Bay Natural Resource Trustee Council:

The Muckleshoot Indian Tribe
The National Oceanic and Atmospheric Administration
The Suquamish Tribe
The State of Washington
The United States Department of the Interior

Contents

Acronyms & Abbreviations 4
Executive Summary 4
1. Introduction 6
1.1 Relationship to Final Lower Duwamish River NRDA Restoration Plan and Programmatic Environmental Impact Statement 6
1.2 Purpose and Need for Restoration 7
1.3 Restoration Objectives 8
1.4 Natural Resource Trustee Authority 9
1.5 Summary of Proposed Settlement Agreement 9
1.6 Public Participation 11
1.7 Organization of the Draft RP/EA 11
2. Summary of Potential Injury to Natural Resources 12
3. Proposed Restoration Alternatives 12
3.1 Restoration Screening Criteria 13
3.2 Alternative A: No Action Alternative (Natural Recovery) 15
3.3 Alternative B: Accept Restoration Project One Credits (Preferred) 15
3.4 Evaluation of Alternatives Using Restoration Criteria 16
4. Environmental Assessment 19
4.1 Affected Environment 20
4.1.1 Physical and Biological Setting 20
4.1.2 Demographics and Economy 23
4.1.3 Environmental Justice 23
4.1.4 Recreation 24
4.1.5 Cultural and Historic Resources 24
4.1.6 Components Not Affected or Not Analyzed in this Draft RP/EA 25
4.2 Evaluation of Alternative A: No Action Alternative/Natural Recovery 25
4.2.1 Alternative A Conclusion 25
4.3 Evaluation of Alternative B: Accept Restoration Project One Credits (Preferred) 25
4.3.1 Alternative B Environmental Impacts 26
4.3.2 Alternative B Conclusion 26
4.4 Cumulative Impacts 26

5. Coordination 28
6. Cited Literature 29

Acronyms & Abbreviations

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
City – City of Seattle
CWA – Clean Water Act
DSAYs – discounted service acre years
EPA – United States Environmental Protection Agency
ESA – Endangered Species Act
FWS – United States Fish and Wildlife Service
HFA – Habitat Focus Area
LDR – Lower Duwamish River
MOA – Memorandum of Agreement
NEPA – National Environmental Policy Act
NOAA – National Oceanic and Atmospheric Administration
NRDAR – Natural Resource Damage Assessment and Restoration
OPA – Oil Pollution Act
PAHs – polycyclic aromatic hydrocarbons
PCBs – polychlorinated biphenyls
RP/EA – Restoration Plan/Environmental Assessment
RP and PEIS – Restoration Plan and Programmatic Environmental Impact Statement

Executive Summary

Beginning in the early twentieth century, the Lower Duwamish River ("LDR") has been the site of extensive industrial activities and these activities have resulted in the release of hazardous substances and discharges of oil to the environment. Because of these releases and discharges, natural resources in the LDR have been exposed to and adversely affected by hazardous substances and oil. The physical environment of the LDR has also been altered by dredging, straightening, and shoreline armoring associated with industrial development. Notwithstanding the presence of contamination in the LDR, the LDR remains an important area used by natural resources such as fish, migratory birds, and other wildlife.

Under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC §9601, et seq. ("CERCLA"), the Oil Pollution Act of 1990, 33 USC §2701, et seq. ("OPA") and the Clean Water Act, 33 USC §1251, et seq. ("CWA"), the Trustees for the LDR have been conducting natural resource damage assessment and restoration ("NRDAR") activities for the LDR. The Trustees for the LDR are the United States Department of the Interior, represented by the United States Fish and Wildlife Service ("FWS"); the National Oceanic and Atmospheric Administration ("NOAA"), on behalf of the United States Department of Commerce; the Muckleshoot Indian Tribe; the Suquamish Tribe; and the State of Washington represented by the Washington State Department of Ecology (State lead Trustee), and the Washington State Department of Fish and Wildlife (collectively, "the Trustees"). For the purposes of this NRDAR, the LDR has been defined by the Trustees to encompass the lower seven miles of the Duwamish River, from bank to bank; the mouth of the Duwamish River and its confluence with

Elliott Bay in the Puget Sound; and the delta area near Harbor Island, i.e., the nearshore areas adjacent to Harbor Island and the East and West Waterways (Section 2.1, Lower Duwamish River Natural Resource Damage Assessment: Injury Assessment Plan).

To implement the NRDAR process, the Trustees work together to determine the extent of injuries to natural resources caused by releases of hazardous substances and discharges of oil in the LDR. The Trustees then seek damages from potentially responsible parties to compensate for the injuries to natural resources and related lost services caused by the releases and discharges. Once the Trustees have recovered damages, the Trustees plan and implement restoration activities to restore, replace, or acquire the equivalent of those resources injured by the hazardous releases and discharges of oil and the services provided by those resources. To guide restoration decisions on specific projects, in 2013, the Trustees issued a "Final Lower Duwamish River NRDA Restoration Plan and Programmatic Environmental Impact Statement" ("Final LDR RP and PEIS"). In the Final LDR RP and PEIS, the Trustees selected Integrated Habitat Restoration as the Preferred Alternative. Under that Preferred Alternative, the Trustees focus on projects that restore habitat that will benefit a suite of potentially injured resources in the LDR by creating habitat that will provide food, foraging and resting areas for fish, shorebirds, and other wildlife. Project One, which is being developed by Bluefield Holding, Inc. ("Bluefield"), is such a project.

Here, the Trustees have developed this Draft Restoration Plan/Environmental Assessment ("RP/EA") consistent with applicable legal authorities, e.g., Section 111(i) of CERCLA, to describe to the public and evaluate the type and amount of restoration that will be provided by Project One, including that project's environmental impacts. The National Environmental Policy Act, 42 USC §4321, et seq. ("NEPA"), requires federal agencies to identify and evaluate impacts to the environment that may occur due to federal actions. In this Draft RP/EA, restoration alternatives are analyzed to identify and evaluate potential environmental impacts resulting from the implementation of those alternatives. This Draft RP/EA evaluates a No Action Alternative (Alternative A) and an Accept Restoration Project One Credits Alternative (Alternative B), describes the affected environment, and summarizes the likely impacts of the analyzed restoration alternatives. The Trustees have made this Draft RP/EA available to the public for review and comment. At the close of the public review and comment period, the Trustees will address public comments in the Final RP/EA and this public feedback will inform the Trustees' Selected Restoration Alternative.

Most of the restoration credits for Project One are expected to be used to restore, replace or acquire the equivalent of natural resources injured and services lost due to releases of hazardous substances and discharges of oil from the City of Seattle's ("City") facilities to the LDR. The restoration analyzed by the Trustees in the Draft RP/EA has been proposed to be used by the City to resolve the City's liability in a consent decree filed with the United States District Court for the Western District of Washington. Other settlements between the Trustees and other liable parties could use the remaining restoration credits in Project One for resolution of their liability in future consent decrees.

1. Introduction

This Draft RP/EA has been prepared by the Trustees for the LDR to identify and analyze an action, Project One, to restore natural resources potentially injured and natural resource services lost due to releases of hazardous substances and discharges of oil into the LDR. The Trustees developed this Draft RP/EA to inform the public about a specific restoration activity that the Trustees are evaluating that will likely compensate for the potential injuries to natural resources and related service losses caused by the releases of hazardous substances and discharges of oil into the LDR, including releases and discharges from facilities operated by the City. The City has entered into a proposed consent decree with the Trustees, which has been filed concurrently with the public notice and comment period for this Draft RP/EA. In this Draft RP/EA, the Trustees are analyzing the restoration action proposed in the consent decree: the Trustees will accept discounted service acre year ("DSAY") restoration credits purchased by the City from a restoration project in the LDR.[1] The restoration project credits correspond to environmental benefits generated by the restoration project that will restore, replace, or acquire the equivalent of natural resource injuries and service losses caused by releases of hazardous substances and discharges of oil from the City's facilities.

Consistent with CERCLA, OPA, CWA, NEPA and related legal authorities, this Draft RP/EA:

- Explains the purpose and need for natural resource restoration;
- Summarizes the natural resource injuries and service losses associated with the City's facilities;
- Presents the restoration alternatives evaluated by the Trustees;
- Outlines the Trustees' restoration goals and restoration screening criteria;
- Evaluates the restoration alternatives under the restoration screening criteria; and
- Analyzes the restoration alternatives' likely impacts to the environment as well as cumulative effects that may result from implementation of the alternatives.

The Trustees seek public review and comment of this Draft RP/EA and will address comments in the Final RP/EA, which will be made public and document the Trustees' Selected Restoration Alternative.

1.1 Relationship to Final Lower Duwamish River NRDA Restoration Plan and Programmatic Environmental Impact Statement

This Draft RP/EA tiers from the "Final Lower Duwamish River NRDA Restoration Plan and Programmatic Environmental Impact Statement" ("Final LDR RP and PEIS"), which can be accessed here:

[1] A DSAY is a metric used by the Trustees to measure the total level of ecological services provided by one acre of habitat over a single year. For more information about the Trustees' use of DSAYs and measuring natural resource injuries and restoration benefits, see Section 2 of the Final LDR RP and PEIS.

https://casedocuments.darrp.noaa.gov/northwest/lowerduwamishriver/pdf/Final%20Duwamish%20River%20NRDA%20PEIS%20and%20Restoration%20Plan.pdf.

In 2013, the Trustees issued the Final LDR RP and PEIS to document the Trustees' evaluation of the restoration action alternatives and set forth the Trustees' restoration action selection process and criteria. In the Final LDR RP and PEIS, the Trustees analyzed three restoration alternatives and selected Integrated Habitat Restoration as the Preferred Alternative (See Final LDR RP and PEIS, Section 9.1.3). Under Integrated Habitat Restoration, the Trustees will focus on restoration projects that restore habitat that will benefit a suite of potentially injured resources in the LDR by creating habitat that will provide food, foraging and resting areas for fish, shorebirds, and other wildlife (See Final LDR RP and PEIS, Section 9.1.3). This Draft RP/EA tiers (40 CFR 102.20, 40 CFR 1508.28, and 43 CFR 46.140) from and incorporates by reference (40 CFR 1502.21 and 43 CFR 46.135) portions of the Final LDR RP and PEIS for efficiency where appropriate. Under NEPA, tiering is allowed if the future proposed activity is within the range of alternatives and that the nature of the proposed action's environmental impacts is considered in the programmatic document. Here, specific sections of the Final LDR RP and PEIS are cited and summarized to incorporate the Final LDR RP and PEIS by reference in the Draft RP/EA. When preparing this Draft RP/EA, the Trustees reviewed the Final LDR RP and PEIS in light of current conditions and have found the Final LDR RP and PEIS, and the analysis therein, to be relevant and applicable to current conditions in the LDR. The activities proposed in this Draft RP/EA are consistent with the processes and criteria set forth in the Final LDR RP and PEIS and in line with the Preferred Alternative, Integrated Habitat Restoration Alternative, selected in the Final LDR RP and PEIS.

As explained in the Final LDR RP and PEIS, the Trustees are developing restoration plans, and selecting and implementing restoration projects, prior to completing the damage assessment processes that will identify and quantify injuries and losses to natural resources and associated natural resources services (See Final LDR RP and PEIS, Sections 1.2, 1.3 and 1.6.4).] Among other benefits, this has allowed the Trustees to reach early settlements with potentially responsible parties, which in turn provide restoration of injured natural resources much sooner than otherwise would be the case. This Draft RP/EA is part of that restoration plan development. However, the Trustees note that the damage assessment process is ongoing, and selection by the Trustees of a specific restoration projects in this Draft RP/EA (or other restoration projects in subsequent RP/EAs) does not mean that the damage assessment process has been completed. The formal damage assessment process was announced by the Trustees on January 29, 2016 and remains ongoing.

1.2 Purpose and Need for Restoration

The Trustees developed the Final LDR RP and PEIS to evaluate restoration alternatives to restore, replace or acquire the equivalent of those natural resources potentially injured by releases of hazardous substances and discharges of oil in the LDR and compensate for lost resource services (See Section 1.2, Final LDR RP and PEIS). Based on their analysis set forth in the Final LDR RP and PEIS, the Trustees selected Alternative Three, Integrated Habitat Restoration, as the Preferred Alternative to restore potentially injured resources in the LDR.

The purpose of this Draft RP/EA is to identify and analyze an action, acceptance of DSAY credits from Project One, to restore natural resources potentially injured and natural resource services lost due to releases of hazardous substances and discharges of oil into the LDR. Most of the DSAY credits from Project One have been offered to the Trustees by the City in settlement to compensate for the natural resource injuries and services lost due to the release of hazardous substances and discharges of oil from the City's 31 facilities located on and in the vicinity of the LDR.[2] The City owns or owned combined sewer overflows, storm drains and other facilities adjacent to or on the LDR, including the Georgetown Steam Plant. These facilities released hazardous substances and discharged oil that injured natural resources in the LDR. The need for this Draft RP/EA is to describe the Project One restoration actions proposed in the consent decree between the Trustees and the City related to the City's outstanding natural resource damages liability for the LDR.[3] This Draft RP/EA identifies the Trustees' proposed actions to restore, replace or acquire the equivalent of those natural resources and lost services potentially injured or lost by hazardous releases and discharges of oil associated with the City, including, but not limited to, juvenile chinook salmon, other fish, migratory birds, and other ecological services that they provide. In addition, if the Trustees decide in the Final RP/EA to accept Project One DSAY credits as appropriate restoration for the natural resource injuries and services lost due to the release of hazardous substances and discharges of oil into the LDR, DSAY credits from Project One that are not used by the City could be used by other responsible parties to resolve their liabilities with the Trustees.

1.3 Restoration Objectives

Because natural resources that rely on the estuarine and riparian habitat in the LDR are potentially injured by hazardous releases and discharges of oil, the Trustees identified restoration objectives that will restore the estuarine and riparian habitat that supports these resources (See Section 6.5, Final LDR RP and PEIS). To that end, the Trustees identified the following restoration objectives, which informed the development of this Draft RP/EA:

1. Implement restoration with a strong nexus to the injuries caused by the releases of hazardous substances in the LDR.
2. Provide a functioning and sustainable ecosystem where selected habitats and species of injured fish and wildlife will be enhanced to provide a net gain of habitat function beyond existing conditions.
3. Integrate restoration strategies to increase the likelihood of success.
4. Coordinate restoration effort with other planning and regulatory activities to maximize habitat restoration.
5. Involve the public in restoration planning and implementation.

---

[2] The current estimated restoration value of Restoration Project One is 43.95 DSAY Credits. The proposed consent decree requires the City to purchase 28 DSAY Credits from Bluefield.

[3] In 1991, the City entered into a consent decree with the Trustees, which partially resolved the City's natural resource damages liability related to the LDR (See *United States of America, et al v. City of Seattle & Municipality of Metropolitan Seattle*, Civil No. C90-395WD (W.D. Wash., Dec. 23, 1991 (amended, Oct. 13, 1999)). The 1991 consent decree did not address the City's natural resource damages liability for discharges after the effective date of that consent decree related to the 31 facilities discussed in this Draft RP/EA.

These restoration objectives are consistent with the types of restoration actions that are described under the Preferred Alternative identified in the Final LDR RP and PEIS.

1.4 Natural Resource Trustee Authority

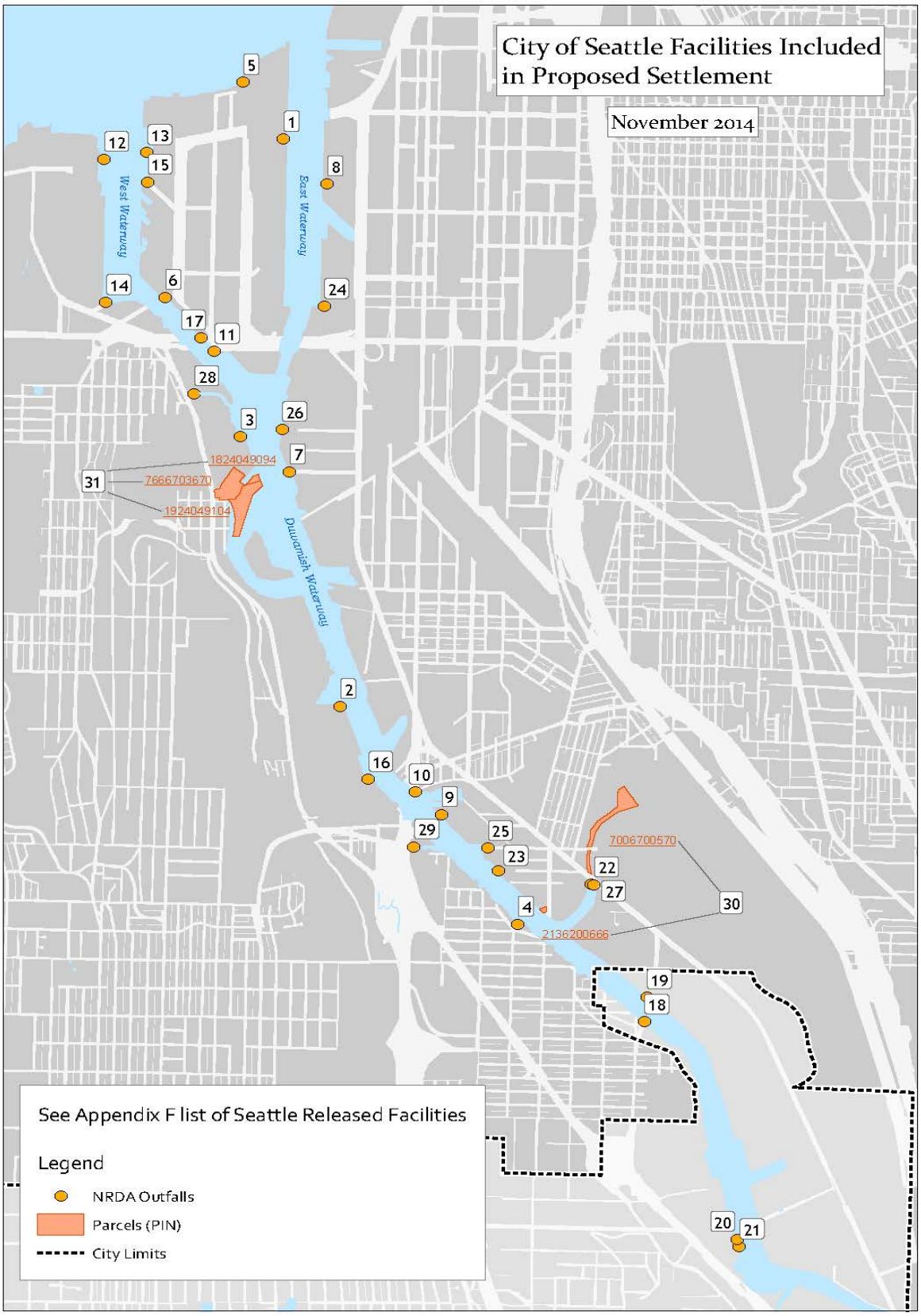
Pursuant to federal law, the Trustees are authorized to act on behalf of the public to assess injuries to natural resources and lost services resulting from releases of hazardous substances and discharges of oil and pursue claims against potentially responsible parties to seek compensation for such losses.[4] The goal of the natural resource damage assessment and restoration ("NRDAR") process is for the Trustees to plan and implement actions that will restore, replace or acquire the equivalent of those natural resources and services that were injured or lost because of releases of hazardous substances or discharges of oil.

The Trustees work together pursuant to a 2006 Memorandum of Agreement ("MOA") signed by each of the Trustees. The MOA creates the Elliott Bay Trustee Council and formalizes the Trustees' cooperation and shared efforts to conduct a NRDAR for the LDR and Elliott Bay. Participating Trustees are the United States Department of the Interior; NOAA, on behalf of the United States Department of Commerce; the Muckleshoot Indian Tribe; the Suquamish Tribe; and the State of Washington represented by the Washington State Department of Ecology (State lead Trustee), and the Washington State Department of Fish and Wildlife.

1.5 Summary of Proposed Settlement Agreement

A proposed settlement between the Trustees and the City is memorialized in a consent decree that has been lodged with the United States District Court for the Western District of Washington. The consent decree is subject to a thirty-day (30) public notice and comment period, which runs concurrently with the public notice and comment period for this Draft RP/EA. A Notice of Availability for the Consent Decree and this Draft RP/EA was published in the Federal Register. The proposed consent decree's terms provide that under the CWA, CERCLA, OPA and the Washington Model Toxics Control Act, Chapter 70.105D RCW, the Trustees will release the City from natural resource damages liability related to 31 City facilities. In return, the City has agreed to fund a portion of Restoration Project One, which is located on City-owned property on the LDR in King County (Alternative B). The City will purchase 28 DSAY restoration credits generated by Restoration Project One. Restoration Project One will create and restore approximately one acre of off-channel, riparian and upland habitat for juvenile salmonids, other fish, and migrating birds. The City will also conduct the long-term stewardship of Restoration Project One. A copy of the proposed consent decree is available during the public notice and comment period here https://www.justice.gov/enrd/consent-decrees .

[4] The designation of natural resource trustees is explained in CERCLA, 42 USC § 9607(f), and the National Contingency Plan, 40 CFR subpart G.


City of Seattle Facilities Included in Proposed Settlement
November 2014
West Waterway
East Waterway
Duwamish Waterway
5
1
12
13
15
8
14
6
24
17
11
28
3
26
7
31
1824049094
7666703670
1824049104
2
16
10
9
29
25
23
22
27
4
7006700570
30
2136200666
19
18
20
21
See Appendix F list of Seattle Released Facilities
Legend
NRDA Outfalls
Parcels (PIN)
City Limits

1.6 Public Participation

Public participation is an important part of the Trustees' restoration planning process and is also called for under the CERCLA NRDAR regulations (e.g., 43 CFR § 11.81(d)(2)). Under NEPA, federal agencies are also required to comprehensively analyze the impacts of their proposed actions and make information related to their analyses publicly available. The Trustees have and will continue to solicit public participation in the restoration planning and NEPA processes (Section 4.2, Final LDR RP and PEIS).

Accordingly, this Draft RP/EA will be made available for public review and comment for 30 days beginning with the publication of the Notice of Availability in the Federal Register. The Trustees will review public comments, and if the RP/EA is approved and the consent decree with the City is entered by the Court, the Trustees will implement the Preferred Alternative described in this document. Before finalizing this Draft RP/EA, the Trustees will review and address public comments. The Trustees' responses to public comments will be incorporated in the Final RP/EA. Public comments may be submitted in writing or by email:

Jeff Krausmann
Washington Fish and Wildlife Office
U.S. Fish and Wildlife Service
510 Desmond Drive, SE, Suite 102
Lacey, WA 98503-1263
Jeff_krausmann@fws.gov

Copies of this Draft RP/EA can be accessed at:

https://www.fws.gov/wafwo/

The Trustees maintain records related to the LDR NRDAR decision making process. These records are available on the Elliott Bay NRDAR website:
https://www.diver.orr.noaa.gov/web/guest/diver-admin-record?diverWorkspaceSiteId=5501 .

As the Trustees continue restoration planning, the Trustees may amend the Final RP/EA if significant changes are made to the type, scope or impact of the restoration actions. If there is a significant modification made to the Final RP/EA, the Trustees will provide another public review and comment opportunity related to the modification.

1.7 Organization of the Draft RP/EA

The following sections of this Draft RP/EA describe the potential injuries to natural resources related to the City's facilities (section 2), proposed restoration alternatives (section 3), as well as the affected environment, potential impacts of the implementation of the alternatives on the human environment, and the potential cumulative impacts of the proposed restoration alternatives (section 4).

2. Summary of Potential Injury to Natural Resources

Data collected in the LDR indicate that natural resources including fish and migratory birds have been exposed to potentially injurious levels of contaminants in the LDR (AECOM 2012, Johnson, et al., 2009, Windward 2010). Investigations in the LDR have found hazardous substances in sediments, soils and groundwater, including but not limited to arsenic, cadmium, copper, mercury, lead, zinc, phthalates, hexachlorobenzene, polychlorinated biphenyls ("PCBs"), and polycyclic aromatic hydrocarbons ("PAHs"). The Trustees have found over 30 hazardous substances in the LDR sediments (See NOAA, Lower Duwamish Waterway Sediment Characterization Study Report 1998). Nine species of fish that are listed as threatened or candidate species under the Washington State Department of Fish and Wildlife or the Endangered Species Act, 16 USC §1531, et seq. ("ESA"), reside in or migrate through the LDR: Chinook salmon, coho salmon, Puget Sound steelhead, river lamprey, bull trout, Pacific herring, Pacific cod, walleye pollock, and rockfish species (Section 2.3.2, Lower Duwamish River Natural Resource Damage Assessment: Injury Assessment Plan). Of the more than eighty bird species found to use and/or may occur in the LDR, three are listed as threatened under the Endangered Species Act: Marbled murrelet, Streaked horned lark, and Yellow-billed cuckoo. (Section 2.3.2, Lower Duwamish River Natural Resource Damage Assessment: Injury Assessment Plan).

(Fledging Peregrine Falcon perched on fence between marsh and riparian habitat at Restoration Project One. Photo credit: Michael Carlson, FWS)

3. Proposed Restoration Alternatives

Pursuant to 43 CFR §11.82(a), the Trustees developed proposed alternatives to restore, replace or acquire the equivalent of those resources and services injured by releases of hazardous substances and discharges of oil from the 31 City LDR facilities. The Trustees first developed the Final LDR RP and PEIS and identified three broad restoration alternatives (Section 9, Final LDR PR and PEIS). In the Final LDR RP and PEIS, the Trustees selected Alternative 3, Integrated Habitat Restoration, as the Preferred Alternative. Integrated Habitat Restoration involves restoration actions that will create and enhance habitat to provide food, foraging and resting areas for juvenile salmonids, other fish, birds, and wildlife (Section 9.1.3, Final LDR RP

and PEIS). Integrated Habitat Restoration includes restoration actions such as removal of fill to restore mudflats, marsh or riparian habitat; creation of off-channel habitat; altering shorelines to remove hardened banks and create gentler slopes; and removal of over- and in-water structures. The Trustees' Preferred Alternative (Alternative B) identified in Section 3.3 of this Draft RP/EA focuses on habitat creation and enhancement that will benefit a suite of potentially injured species and is consistent with Integrated Habitat Restoration, the Preferred Alternative identified in the Final LDR RP and PEIS.

To identify their Preferred Alternative in this Draft RP/EA, the Trustees analyzed proposed restoration alternatives under site-specific and regulatory criteria to determine whether the alternatives provided restoration of a type, quality, and quantity needed to compensate the public for the resources and resource services injured and lost as a result of hazardous releases and discharges of oil from facilities operated by responsible parties in the LDR, including from the City's facilities. The Trustees also analyzed the potential effects of the proposed restoration alternatives to the human environment as required under NEPA (40 CFR § 1508.9(b)).

3.1 Restoration Screening Criteria

In order to determine whether the proposed alternatives would sufficiently compensate for the natural resource injuries and service losses caused by contamination in the LDR, the Trustees analyzed each proposed restoration alternative under the Trustees' LDR-specific restoration screening criteria. The Trustees developed two tiers of restoration screening criteria to identify and evaluate potential restoration projects (Section 8.2, Final LDR RP and PEIS). These criteria also reflect and incorporate the Trustees' restoration objectives and the restoration alternative selection factors listed in 43 CFR §§11.82(d)(1) – (10).

<u>Tier 1 Screening Criteria:</u>

Habitat Focus Area: Is the potential restoration located within a high priority Habitat Focus Area (HFA)? The Trustees developed four HFAs based on nexus to resource injuries, important habitat features and other considerations such as geographic boundaries, land and maritime uses, and proximity to other restoration (Section 6.6, Final LDR RP and PEIS). The HFAs were prioritized with the highest priority given to HFA1 (the LDR as defined by the Trustees' Lower Duwamish River Natural Resource Damage Assessment: Injury Assessment Plan) and HFA2 (the inner Elliott Bay shoreline between Duwamish Head and Port of Seattle Terminal 91) because restoration in these areas is more likely to provide benefits to the full suite of potentially injured natural resources.

Benefits to Injured Resources: How similar are the habitats being created or enhanced to the natural resource injuries and lost services that resulted from the contaminant impacts? The Trustees will prioritize restoration that most directly benefits injured resources and services.

Future Management: Would the landowner agree to a conservation easement or other appropriate land management restriction? The Trustees cannot consider restoration without being able to estimate the potential benefits the action will provide, and future land management is critical to the Trustees' ability to estimate these potential benefits.

Tier 2 Selection Criteria:

Technical Feasibility (43 CFR §11.82(d)(1)): Are the management skill and technology necessary to implement the proposed restoration alternative known and is there a reasonable likelihood of successful completion of the action in a reasonable time period? What are the conditions specific to the proposed alternative that might influence its success?

Cost to Carry Out the Restoration Alternative (43 CFR §11.82(d)(3)): What are the costs associated with implementation of the proposed restoration alternative at the proposed location? The Trustees will take a comprehensive view of costs associated with the proposed alternative and all else being equal, will prefer alternatives that cost less than others.

Source Control and Recontamination Potential (43 CFR §§11.82(d)(4), (5) & (8)): Does the alternative have adequate source control so that the restoration is not likely to be contaminated by releases of hazardous substances? Is there a likelihood that the proposed alternative will result in recontamination of restoration from sediments? The Trustees' preferred alternative should not result in further resource injury or pose a risk to resources or public health.

Extent to Which Each Location Will Maximize Benefits to Resources: When evaluating this selection criteria, the Trustees will determine benefits to injured resources by evaluating specific features of a proposed restoration site, the habitat type to be created, the location of the site, and the site's proximity to other restoration. The Trustees will consider six LDR-specific restoration attributes when evaluating a proposed restoration alternative under this selection criteria and prefer proposed alternatives that incorporate one or more of these attributes (Section 7, Final LDR RP and PEIS):

1. Overall size – The Trustees will prefer larger restoration projects.
2. Shape of the project – The Trustees' preference will depend on the type of habitat being created and its location.
3. Habitat type – The Trustees will prefer proposed alternatives that will create habitats that replace lost or scarce habitat types and/or habitats that are important to support injured resources.
4. Diversity – The Trustees' preference is for alternatives that support a diverse array of species and multiple ecological niches.
5. Location in the LDR – When evaluating this attribute, the Trustees will look at the historic condition of the LDR, resource access and use, societal/cultural factors and potential for contamination.
6. Landscape connectivity – The Trustees will review the proposed restoration's relationship and location relative to existing habitat.

Any proposed restoration alternatives must also be in compliance with and consistent with all applicable federal, state and tribal policies and laws (43 CFR §§11.82(d)(9)&(10)).

Actions to restore, replace or acquire the equivalent of injured natural resources and lost services are likely to have both long- and short-term impacts to the physical, biological, socio-economic

and/or cultural environments. Below the Trustees analyze the potential beneficial and adverse impacts of two alternatives on the human environment. Table 1 provides a comparative analysis of the two restoration alternatives under the two-tiered restoration screening criteria.

3.2 Alternative A: No Action Alternative (Natural Recovery)

As required by NEPA and CERCLA, the Trustees considered a No Action Alternative. A No Action Alternative means that the Trustees would not accept the DSAY credits generated by Restoration Project One or any other restoration action proposed by the City. The Trustees would not take any affirmative action to restore injured resources or require any other party to do so. Instead, the Trustees would rely on natural recovery for injured resources to return to the condition they would otherwise be in absent the release of hazardous substances or discharges of oil. A No Action Alternative will not compensate for interim lost resource services. Additionally, this alternative assumes the ongoing federal and state activities such as institutional controls, source control, and remedial actions, but does not include actions by the Trustees specifically targeting injured resource restoration such as habitat creation.

Under a No Action Alternative, the Trustees would not accept DSAY restoration credits generated by Restoration Project One, including the proposed 28 DSAY restoration credits generated by Restoration Project One from the City. In this scenario, the third-party project implementer of Restoration Project One would then be without funding from the City or other responsible parties to support the actions necessary to maintain Restoration Project One's approximately one acre of off-channel, riparian and upland habitat to support injured natural resources in the LDR. In the absence of maintaining the project, habitat supporting injured fish, migratory birds, and wildlife in the LDR will continue to degrade. Juvenile salmonids and other fish will be unable to rest and forage in additional needed off-channel habitat in the transition zone where they osmoregulate to adjust to the higher salinity in the Puget Sound. Riparian and upland habitat will not be available to migratory birds and wildlife for foraging, nesting and refuge. The LDR ecosystem processes will continue to remain impaired for a longer period because processes such as water filtration and nutrient input will not be enhanced.

3.3 Alternative B: Accept Restoration Project One Credits (Preferred)

Alternative B involves the Trustees accepting DSAY restoration credits generated by Restoration Project One from parties responsible for releases of hazardous substances and discharges of oil into the LDR, including 28 DSAY restoration credits generated by Restoration Project One from the City pursuant to the proposed settlement between the Trustees and the City. Restoration Project One is located within the Trustees' HFA1 on the west side of the West Waterway at approximately Duwamish River mile 0.5 in Seattle, King County, Washington. The City will purchase the 28 DSAY restoration credits from a third-party restoration developer, Bluefield Holdings, Inc. ("Bluefield). The City's purchase, like purchases from other responsible parties, funds habitat implementation, adaptive management, and long-term stewardship at Restoration Project One. Restoration Project One converted approximately one acre of riprap and unvegetated land into habitat to benefit injured resources in the LDR. The created habitat includes an off-channel inlet, restored uplands, intertidal marsh and mudflat, and shallow

subtidal mudflat. The Trustees determined that these habitat types are scarce in the LDR and serve as important food sources, and rearing, refuge and spawning areas for resources injured by releases of hazardous substances and discharges of oil in the LDR (Section 2.2.2, Final LDR RP and PEIS). Restoration Project One will provide more of these critical habitat types to support injured juvenile salmonids, migratory birds and other wildlife.

Under Alternative B, the City will also provide long-term stewardship and permanent protection to ensure the ongoing success and sustainability of Restoration Project One. The proposed consent decree requires the City, as owner of the property underlying Restoration Project One, to permanently restrict the use of the property for habitat restoration under an environmental convent. The City shall also conduct long-term stewardship of Restoration Project One which will ensure that the restored habitat is maintained now that Restoration Project One is implemented and providing ecological benefits. Long-term stewardship will allow Restoration Project One to continue to provide ecological benefits to resources injured by hazardous releases and discharges of oil.

3.4 Evaluation of Alternatives Using Restoration Criteria

An evaluation of restoration alternatives is presented in the following "Table 1. Evaluation of Alternatives under Restoration Screening Criteria."

[Remainder of page intentionally left blank.]

Table 1: Evaluation of Alternatives under Restoration Screening Criteria

Restoration Criteria	Alternative A: No Action	Alternative B: Accept Restoration Project One Credits (Preferred)
Tier 1:		
Habitat Focus Area ("HFA")	The No Action Alternative would not restore, replace, or acquire the equivalent of natural resources and services injured due to releases of hazardous substances and discharges of oil in the Trustees' defined HFAs.	This alternative is restoring and maintaining habitat in the Trustees' highest priority HFA, HFA1. The restored habitat would support resources injured by hazardous releases and discharges of oil.
Benefits to Injured Resources	The No Action Alternative would not benefit injured resources because it would not restore, replace, or acquire the equivalent of natural resources and services injured or lost from releases of hazardous substances and discharges of oil.	This alternative is restoring habitat that provides benefits to a suite of resources injured by releases of hazardous substances and discharges of oil.
Future Management (Duration of Benefits)	The No Action Alternative would not restore, replace or acquire the equivalent of injured resources and services caused by hazardous releases or oil discharges and would provide no potential benefits for the Trustees to estimate or seek to protect.	Under this alternative, the duration of the benefits will be long-term. The landowner will be required to permanently restrict the uses of the land for restoration and habitat conservation. The permanent property restriction will be paired with required long-term stewardship to ensure that the alternative will be more likely to continue to provide injured resources with benefits into the future.
Tier 2:		
Technical Feasibility	The No Action Alternative is technically feasible.	Activities included in this alternative are technically feasible and likely to result in the restoration of resources injured or similar to those injured by releases

		of hazardous substances and discharges of oil.
Cost to Carry Out the Alternative	The No Action Alternative would not restore, replace or acquire the equivalent of those resources and services injured or lost due to releases of hazardous substances and discharges of oil; therefore, the No Action Alternative would not incur any costs.	The costs to the City to carry out this alternative are estimated to total approximately $3,920,000 which would fund creation and enhancement of habitat that is likely to support resources injured by hazardous releases and discharges of oil. Additional costs for DSAY credits not sold to the City are estimated at approximately $2,233,000.
Source Control and Recontamination Potential	The No Action Alternative will not cause further resource injury or pose additional risks to human health and the environment. Environmental and human health risks as they currently exist would likely remain the same under the No Action Alternative.	This alternative would not elevate existing public health and safety issues.
Extent to Which Location Will Maximize Benefits to Resources	The No Action Alternative would not restore, replace, or acquire the equivalent of natural resources and services injured due to releases of hazardous substances and discharges of oil and would not produce resource benefits.	This alternative would be located in HFA1 and create or enhance approximately 1 acre of scarce off-channel, intertidal marsh, mudflat and other habitat types that support the suite of resources injured by releases of hazardous substances and discharges of oil. This alternative is likely to meet the Trustees' restoration criteria.
Compliance with Laws and Policies	The No Action Alternative would not comply with or be consistent with relevant laws and policies because it does not restore, replace, or acquire the equivalent of the resources and services injured by releases of hazardous substances and discharges of oil as required by natural resource damage assessment legal authorities, i.e., CERCLA, OPA and the CWA.	This alternative meets the requirements and goals of CERCLA, OPA and the CWA to compensate the public by restoring, replacing or acquiring the equivalent of resources injured by releases of hazardous substances and discharges of oil. The Trustees will comply with all applicable requirements.
Time to Provide Resource Benefits	Under the No Action Alternative, it will take longer to provide natural resource benefits	The time for this alternative to provide natural resource benefits is less than the No Action

	than if the Trustees were to pursue Alternative B. The No Alternative Action would rely on natural recovery to provide benefits to injured natural resources.	Alternative because this alternative includes affirmative habitat creation and enhancement, which will likely start benefiting resources injured by hazardous releases and discharges of oil in a relatively short timeframe.

4. Environmental Assessment

Consistent with the CERCLA NRDAR regulations, e.g., 43 CFR §11.93, in this section of the Draft RP/EA, the Trustees' document their evaluation of the restoration alternatives to compensate the public for natural resource injuries caused by the release of hazardous substances and discharges of oil from the City's facilities and other responsible parties' facilities on and near the LDR. The Trustees also evaluate the environmental impacts of the No Action Alternative and Alternative B (the Preferred Alternative) to determine whether the implementation of either of these alternatives will significantly affect the human environment. To evaluate the alternatives' potential impacts to the human environment, the Trustees focus on the physical, biological, socio-economic, and cultural environments. At the conclusion of their evaluation for each alternative, the Trustees will determine whether the alternative is a preferred alternative and if, after the public comment period closes and a Final RP/EA is published, the alternative should be implemented if a Finding of No Significant Impact is reached.

The United States Department of the Interior is acting as the lead federal agency for NEPA compliance for this Draft RP/EA and NOAA is a cooperating agency. NOAA may adopt the Final EA in accordance with 40 CFR § 1506.3 and its agency-specific NEPA procedures.

The following definitions will be used to describe the environmental consequences evaluated in this Draft RP/EA:

- *Short-term or long-term impacts*: These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. Short-term impacts are those impacts that would occur only with respect to a specific activity or a finite period. Long-term impacts are those that would more likely persist or be chronic.
- *Direct or indirect impacts*: A direct impact is caused by a proposed action and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a proposed action and might occur at a later time or be farther removed in distance but still be a reasonably foreseeable outcome of the action.
- *Negligible, minor, moderate or major impacts*: These relative terms are used to characterize the magnitude of an impact. Negligible impacts are generally not quantifiable and do not have perceptible impacts on the environment. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively inconsequential effect. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification. Major

impacts are those that, in their context and due to their intensity (severity), have the potential to meet thresholds for the significance set forth in Council on Environmental Quality NEPA regulations (40 CFR §1508.27) and thus warrant heightened attention and examination for potential means for mitigation to fulfill NEPA requirements.

- *Adverse or beneficial impacts*: An adverse impact is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.
- *Cumulative impacts*: Cumulative impacts are defined as "the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR §1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area.

4.1 Affected Environment

For purposes of this Draft RP/EA, the Trustees focused on the lower seven miles of the Lower Duwamish River, located in King County, Washington. The affected environment in the LDR is described in detail in Chapter 3 of the Final LDR RP and PEIS. That information is incorporated in this Draft RP/EA by reference and summarized briefly below.

4.1.1 Physical and Biological Setting

Historically, the LDR was forestland, intertidal flats, and freshwater and estuarine wetlands. Beginning with industrialization in the early twentieth century, the LDR became increasingly altered and is now mainly industrial and residential development. The LDR is restricted along both banks by levees or rock revetments and is periodically dredged between its mouth and river mile 5.5. Approximately 99 percent of the former estuarine wetlands and mudflats have been either dredged or filled for industrial purposes (U.S. Department of the Interior, Fish and Wildlife Service, 2000; U.S. Army Corps of Engineers, 2000).

The project location for the Preferred Alternative (Alternative B) is on the west side of the West Waterway at river mile 0.5 of the Lower Duwamish River in Seattle, King County, Washington. The Preferred Alternative project property consists of approximately one acre owned by the City and directly abuts public utility and infrastructure features, as well as industrial development. The project property is under and adjacent to the Spokane Street Bridge, also known as the West Seattle Low-Level Bridge, which is located to the south of the project property. Further south of the property and the Spokane Street Bridge is the West Seattle Bridge. A dry dock and Port of Seattle facility directly border the northern edge of the property. The eastern edge of the project property is bounded by the Lower Duwamish River. Before third-party habitat creation and enhancement, the project property was a primarily upland site at elevation +17 feet Mean Lower Low Water. The project property's bank and adjacent riverine off-shore portions contained debris, rubble and derelict creosote pilings.

The Preferred Alternative funds the creation, restoration and maintenance of approximately one acre of habitat that is similar to the historic habitat types and conditions found in the LDR. The Preferred Alternative funded project has created an off-channel inlet and created more gradual river and channel slopes. The restored habitat extends approximately 165 feet perpendicular to the Lower Duwamish River (east to west) and travels northwest from the off-channel inlet and turn south under the Spokane Street Bridge to create approximately 190 feet of channel. The approximate acreages of each habitat type created or enhanced under the Preferred Alternative are:

- 0.52 acres of riparian;
- 0.21 acres of intertidal marsh;
- 0.05 acres of intertidal mudflat;
- 0.05 shallow subtidal mudflat; and
- 0.18 acre of habitat mix covered rip rap.[5]

As feasible, marsh and upland vegetation appropriate for habitat types and elevations have been established at the Preferred Alternative project property and invasive vegetation species are being controlled.

The Preferred Alternative project has been subject to initial monitoring and adaptive management for a ten-year (10) performance period (six years of which have passed) followed by long-term stewardship actions to preserve, maintain and protect the project so that it can continue to provide ecological benefits to resources injured by hazardous releases and oil discharges. Additionally, the Preferred Alternative project is subject to an environmental covenant and access agreement that restricts the use of the underlying property to ensure that the project's habitat and related benefits are permanently protected.

Federally listed threatened species under the ESA known to be or that may occur in the vicinity of the Preferred Alternative project include Yellow-billed cuckoo, Coastal-Puget Sound bull trout, Puget Sound Chinook, and Puget Sound steelhead (U.S. Army Corps of Engineers, 2000; NOAA 2007). The Lower Duwamish River, where the Preferred Alternative project is located, is essential fish habitat for Chinook and Steelhead (NOAA, 2014; NOAA 2016). Federal species of concern under the ESA known to be or that may occur in the vicinity of the Preferred Alternative project include the bald eagle (FWS 2007).

[5]Because the LDR is a dynamic natural system, the Trustees anticipate that the exact acreages of each habitat type may slightly shift over time.

Site 1 Habitat Map of Restoration Project One

4.1.2 Demographics and Economy

A summary of demographic data is provided in Table 2. Seattle is the eighteenth most populous city in the United Sates and, from 2000 to 2010, its population grew 8% (http://www.seattle.gov/opcd/population-and-demographics/about-seattle). The City's Office of Planning and Community Development projects that the City will add 120,000 people and 115,000 jobs between 2015 and 2035 (City of Seattle, 2017).

Demographic Category	City of Seattle[6]	King County[7]
Population (2018 estimate)	730,400	2,190,200
Percent Minority	33.7%	35.2%
Median Annual Household Income	$83,476	$78,800
Estimated Percentage of Persons Below Poverty Level	11.5%	10.7%
Households	341,809	789,200
Population per square mile	8,800	1,027

According to the United States Census Bureau, as of 2019, the estimated total percentage of Washington residents in poverty is 10.3% (https://www.census.gov/quickfacts/WA). The total estimated averaged percentage of Washington residents who are minorities is 20.9% (https://www.ofm.wa.gov/washington-data-research/statewide-data/washington-trends/population-changes/population-race).

4.1.3 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. In a memorandum accompanying Executive Order 12898, the President emphasized the importance of the NEPA process to identify and address environmental justice concerns and stated that federal agencies shall provide opportunities for community input in the NEPA process.

Focusing on environmental justice issues associated with implementing the Preferred Alternative, the Trustees reviewed demographic data from the City of Seattle, King County, the

[6] Statistics for the City of Seattle demographic data are from the City of Seattle's Office of Planning and Community Development, which collects data from a variety of sources including the Washington State Office of Financial Management and the United States Census Bureau (http://www.seattle.gov/opcd/population-and-demographics/about-seattle), and the EPA's Environmental Justice Screening and Mapping Tool (Version 2019) (https://ejscreen.epa.gov/mapper/).

[7] Statistics for King County demographic data are from the King County Office of the Executive, which collects data from a variety of sources including the Washington State Office of Financial Management and the United States Census Bureau (https://www.kingcounty.gov/depts/executive/performance-strategy-budget/regional-planning/Demographics.aspx).

State of Washington, and the United States Census Bureau. For purposes of the environmental analysis in this Draft RP/EA, a city or county is considered to have a minority population if its non-white population is greater than 50 percent or if it is meaningfully larger than the statewide non-white population. In this analysis, low-income areas are defined as a city or county in which the percentage of the population below poverty exceeds 50 percent or is meaningfully greater that the statewide average poverty level.

To make a finding that disproportionately high and adverse effects would likely impact minority and/or low-income populations, three conditions must be simultaneously met:

1. There must be a minority or low-income population in the impact zone.
2. A high and adverse impact must exist.
3. The impact must be disproportionately high and adverse on the minority or low-income population.

A comparison of King County and City of Seattle demographic data to statewide demographic date for Washington, indicates that the Preferred Alternative project area is not considered low-income because the low-income population in the project area (11.5-10.7%) is not meaningfully greater than the statewide low-income average poverty level (10.3%). The Preferred Alternative project area does not have a minority population exceeding 50 percent; however, the percentage minority population in the project area (33.7- 35.2%) is relatively greater than the statewide non-white population (20.9%). The Trustees did not identify any high and adverse impacts that would result from the Preferred Alternative. Accordingly, the Trustees did not find that low-income or minority populations would face disproportionately high and adverse effects associated with the Preferred Alternative.

4.1.4 Recreation

Recreational fishing and boating occur in the LDR.

4.1.5 Cultural and Historic Resources

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of the Preferred Alternative on historic properties. Under NEPA, federal agencies must also consider historic properties. The proposed consent decree requires Bluefield to undertake activities to address cultural resource issues at the Preferred Alternative project site, including consulting with the Washington State Department of Archeology and Historic Preservation and federally recognized tribes. Per the 1855 Treaty of Point Elliott, the Suquamish Tribe and the Muckleshoot Indian Tribe have reserved fishing, hunting and gathering rights. Additionally, the Muckleshoot Indian Tribe and the Suquamish Tribe have adjudicated usual and accustomed fishing areas located in the LDR. There are no known historic resources within the Preferred Alternative. Bluefield coordinated with the Muckleshoot Indian Tribe regarding net attachments at the Preferred Alternative project site for Tribal members' use.

4.1.6 Components Not Affected or Not Analyzed in this Draft RP/EA

The following components have been identified as not being present, affected, or analyzed. These components have not been included for additional analysis in this Draft RP/EA.

- Social/Economic/Environmental Justice – The Trustees do not anticipate social or economic impacts from the proposed restoration action because low-income populations will not be adversely affected because the Preferred Alternative is likely to have beneficial environmental outcomes and will likely have no impact on recreation.
- Cultural and Historic Resource Concerns – As appropriate, the Trustees will ensure coordination with the Muckleshoot Indian Tribe, the Suquamish Tribe and the Washington Department of Archeology and Historic Preservation in accordance with Section 106 of the National Historic Preservation Act.
- Health and Safety – No health or safety issues are likely related to the Preferred Alternative. Bluefield conducted historic due diligence and geotechnical investigations and did not find evidence of contamination at or immediately adjacent to the Preferred Alternative project property. Bluefield also committed to sampling at the property, excavating contaminated soil, and replacing any contaminated soil with clean soil.

4.2 Evaluation of Alternative A: No Action Alternative/Natural Recovery

The No Action Alternative is set forth in Section 9.1.1 of the Final LDR RP and PEIS. The Final LDR RP and PEIS contains an evaluation of potential environmental impacts of the No Action Alternative in Section 9.2 of the Final RP and PEIS. Additionally, the No Action Alternative's potential environmental impacts are summarized in Table 3 in the Final LDR RP and PEIS. This information in the Final LDR RP and PEIS is incorporated in this Draft RP/EA by reference.

4.2.1 Alternative A Conclusion

The Trustees have determined that the No Action Alternative would not restore, replace, or acquire the equivalent of natural resources injured by releases of hazardous substances or discharges of oil. Accordingly, the No Action Alternative does not meet the purpose or need for restoration identified in this Draft RP/EA or as required under CERCLA, OPA and other legal authorities that govern the Trustees' NRDAR process and responsibilities.

4.3 Evaluation of Alternative B: Accept Restoration Project One Credits (Preferred)

The Trustees evaluated the likely environmental impacts of the Preferred Alternative (Accept Restoration Project One Credits) at the programmatic level in Section 9 of the Final LDR RP and PEIS. This information in the Final LDR RP and PEIS is incorporated in this Draft RP/EA by reference. As contemplated in the Final LDR RP and PEIS, the following section of this Draft RP/EA tiers from the Final LDR RP and PEIS to analyze likely environmental impacts specific to the Preferred Alternative.

4.3.1 Alternative B Environmental Impacts

It is likely that implementation of the Preferred Alternative will result in long-term direct and indirect moderate benefits that will outweigh any short-term or long-term minor adverse impacts. The Preferred Alternative will require the City to purchase 28 DSAY restoration credits that represent environmental benefits generated by Restoration Project One and thereby, provide funding to support the creation and continued success of approximately one acre of habitat in the LDR. Other responsible parties could purchase the remaining DSAY credits generated by Restoration Project One to resolve their natural resource damages liabilities. Additionally, under the Preferred Alternative, the City will conduct long-term stewardship activities to maintain Restoration Project One habitat to ensure that it will continue for many years to provide long-term benefits that compensate for injury to natural resources and their services. The project will result in minor to moderate direct beneficial environmental impacts to the Restoration Project One property and the natural resources that rely on the scarce habitat types being created by Restoration Project One. Juvenile salmonids and other fish will be able to rest and forage in the off-channel inlet. Migratory birds will be able to use the newly created riparian and upland habitat to feed and nest. The establishment of vegetation will likely result in minor, long-term benefits to air quality because vegetation can reduce local temperatures and enhance microclimates. The Trustees anticipate that the Preferred Alternative will likely result in long-term minor benefits to water quality as marsh vegetation becomes established and acts as a water filter. The visual impact of the created and enhanced habitat may result in minor, long-term benefits for recreational boaters in the LDR. Habitat creation and maintenance associated with the Preferred Alternative may result in short-term and minor adverse impacts to riverbanks, air quality, sediments and the water column mainly resulting from disturbances caused by construction equipment. Any impacts will be limited to periods when construction and maintenance will be actively performed at the project property. Potential adverse impacts will be further lessened because activities at the project property will be undertaken in conjunction with best management practices (e.g., silt curtains, conducting in-water work when salmonids are not present, erosion control measures).

4.3.2 Alternative B Conclusion

The Trustees determined that Alternative B, Accept Restoration Project One Credits, meets all the Trustees' restoration screening criteria (See Table 1) and is consistent with the Trustees' restoration goals identified in the Final LDR RP and PEIS. Moreover, this alternative meets the purpose and need statement in Section 1.2 of this Draft RP/EA. Based on their analysis, the Trustees anticipate that this alternative will result in beneficial direct and indirect long-term impacts to the environment by creating and preserving important habitat for natural resources. In light of the forgoing, Alternative B is the Preferred Alternative.

4.4 Cumulative Impacts

Cumulative impacts related to the Preferred Alternative in the Final LDR RP and PEIS are documented in Section 9.2 of the Final LDR RP and PEIS. The cumulative impacts analysis in the Final LDR RP and PEIS is incorporated in this Draft RP/EA by reference. This section tiers

from the Final LDR RP and PEIS cumulative impacts analysis to discuss project-specific cumulative impacts.

Because the Preferred Alternative is anticipated to restore, replace or acquire the equivalent of injured natural resources and lost services, the Preferred Alternative's cumulative impact is long-term and beneficial. The Preferred Alternative includes the creation and protection of approximately one acre of mixed habitat in the LDR, including upland, riparian, mudflat, and shallow subtidal. These habitat types are important for natural resources injured by releases of hazardous substances and discharges of oil in the LDR. The Preferred Alternative serves as a refuge for natural resources present at a predominantly industrial site.

The cumulative impacts analysis in this Draft RP/EA is commensurate with the degree of direct and indirect environmental impacts that are a likely result of the Preferred Alternative. The Trustees anticipate that the Preferred Alternative will result in predominantly beneficial impacts to the environment and, therefore, this analysis focuses on the incremental effects of the Preferred Alternative in the context of remedial and restoration activities in the LDR. The Preferred Alternative is one component of a potential suite of restoration actions to be taken in the LDR and its vicinity. Additionally, the LDR is subject to related CERCLA remedial activities and source control measures conducted by the United State Environmental Protection Agency and the Washington Department of Ecology. Potential future remedial and source control actions could contribute to the cumulative effects of the Preferred Alternative and could result in increased beneficial environmental effects such as improved water quality. Alone, or in combination with future restoration and remedial activities conducted pursuant to federal and/or state law, it is unlikely that the Preferred Alternative will result in significant cumulative impacts to the human environment. When the Preferred Alternative's physical footprint of approximately one acre is considered singly or with future potential restoration and remedial actions, it is a relatively small area in the context of the LDR. Creation and enhancement of habitat as part of the Preferred Alternative will have negligible, or at most minor impacts, to the recreation, land-use and economic activity in the LDR. Minor or negligible short-term impacts on air quality, water quality, soil and sediments can be anticipated as a result of active habitat creation and maintenance associated with the Preferred Alternative. These minor or negligible short-term impacts are unlikely to result in cumulative adverse environmental impacts because the Preferred Alternative, and any other concurrent restoration or remedial action, would be conducted using best management practices designed to minimize adverse environmental impacts.

The Trustees are also aware that the West Seattle Bridge, which is located south of the Preferred Alternative, may need repairs or replacement. An inspection revealed structural weaknesses and the West Seattle Bridge was then closed to the public in March 2020. The Seattle Department of Transportation is currently analyzing alternatives to repair or replace the West Seattle Bridge. Impacts from the potential West Seattle Bridge repair or replacement to the Preferred Alternative are unknown but would be subject to appropriate adaptive management or other management actions to address lost habitat function caused by such impacts. The Trustees anticipate that any construction work associated with the West Seattle Bridge would be conducted using best management practices designed to minimize adverse environmental impacts. Nevertheless, the Trustees would expect that construction activities to repair or replace the West Seattle Bridge

may have at least some short-term negative impacts to the environment, if not long-term negative impacts. To the extent that West Seattle Bridge construction activities result in negative impacts to the environment, environmental benefits from the Preferred Alternative could offset these negative impacts to an extent.

(Off-channel marsh habitat with goose exclusion fencing at Restoration Project One with the Spokane Street Bridge in the background. Photo credit: Michael Carlson, FWS)

5. Coordination

Muckleshoot Tribe of Indians

Suquamish Tribe

National Oceanic and Atmospheric Administration

U.S. Fish and Wildlife Service

Washington Department of Ecology

Washington Department of Fish and Wildlife

6. Cited Literature

AECOM. 2012. Final Feasibility Study Lower Duwamish Waterway Seattle, Washington Volume I – Main Text, Tables, and Figures. Lower Duwamish Waterway Group Port of Seattle/City of Seattle/King County/The Boeing Company. Prepared by AECOM for submittal to the U.S. Environmental Protection Agency and the Washington State Department of Ecology. October 31.

City of Seattle, Office of Planning and Community Development. 2017. Growth and Livability Report. http://www.seattle.gov/Documents/Departments/OPCD/Livability/Growth%20and%20Livability%20Report.pdf

Elliott Bay Natural Resource Trustees (EBNRT). 2013. Final Lower Duwamish River NRDA Restoration Plan and Programmatic Environmental Impact Statement, by the National Oceanic and Atmospheric Administration. https://darrp.noaa.gov/sites/default/files/case-documents/Final_Duwamish_River_NRDA_PEIS_and_Restoration_Plan.pdf

EBNRT. 2019. Lower Duwamish River Natural Resource Damage Assessment: Injury Assessment Plan. https://pub-data.diver.orr.noaa.gov/admin-record/5501/LDR%20IAP_Final%20Draft_7.31.18.pdf

Johnson, B.L., C.J. Henny, J.L. Kaiser, J.W. Davis, and E.P. Schulz. 2009. An Assessment of Contaminant Exposure and Effects to Ospreys Nesting along the Lower Duwamish River, Washington, 2006-2007. Administrative Report. Reston, VA: U.S. Geological Survey.

National Oceanic and Atmospheric Administration (NOAA). 1998. Duwamish Waterway Sediment Characterization Study Report. https://casedocuments.darrp.noaa.gov/northwest/elliott/pdf/duwrpt1.pdf

NOAA. 2007. Endangered and Threatened Species: Final Listing Determination for Puget Sound Steelhead. *Federal Register*, May 11, 2007.

NOAA. 2014. Endangered and Threatened Wildlife; Final Rule to Revise the Code of Federal Regulations for Species Under the Jurisdiction of the National Marine Fisheries Service. *Federal Register*, April 14, 2014.

NOAA. 2016. Designation of Critical Habitat for Lower Columbia River Coho Salmon and Puget Sound Steelhead. *Federal Register*, February 24, 2016.

U.S. Army Corps of Engineers, Seattle District. 2000. Green/Duwamish River Basin Ecosystem Restoration Study, King County, Washington, Final Feasibility Report.

U.S. Fish and Wildlife Service (FWS). 2000. Green/Duwamish River Basin Restoration Program, Fish and Wildlife Coordination Act Report. Lacey, Washington: Fish and Wildlife Coordination Service, Western Washington Office.

FWS. 2007. National Bald Eagle Management Guidelines. United States Department of Interior, Fish and Wildlife. http://www.fws.gov/migratorybirds/

U.S. District Court, Western District of Washington at Seattle, *United States of America, et al v. City of Seattle & Municipality of Metropolitan Seattle*, December 23, 1991 (as amended Oct. 13, 1999). https://pub-data.diver.orr.noaa.gov/admin-record/5501/eb-cd_Dec_1993.pdf

Washington State Department of Health. 2005. Lower Duwamish Waterway Site: Updated Fish Consumption Advisory and Evaluation of Marine Tissue Collected from the Lower Duwamish Waterway in August and September 2004. Seattle, Washington. Prepared by the Washington State Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry.
https://www.doh.wa.gov/Portals/1/Documents/Pubs/333-103.pdf

Windward (Windward Environmental, LLC). 2010. Lower Duwamish Waterway remedial investigation report, final, for submittal to The US Environmental Protection Agency, The Washington State Department of Ecology. July 9.