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**UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF WASHINGTON  
AT SEATTLE**

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UNITED STATES OF AMERICA, ON BEHALF )  
OF THE NATIONAL OCEANIC AND )  
ATMOSPHERIC ADMINISTRATION AND THE )  
UNITED STATES DEPARTMENT OF THE )  
INTERIOR; THE STATE OF WASHINGTON )  
THROUGH THE WASHINGTON )  
DEPARTMENT OF ECOLOGY; )  
MUCKLESHOOT INDIAN TRIBE; )  
SUQUAMISH TRIBE, )

Plaintiffs, )

v. )

VIGOR INDUSTRIAL LLC; )  
EXXON MOBIL CORPORATION., )

Defendants. )

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Case No.  
2:21-cv-00044-RSM  
CONSENT DECREE

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## I. INTRODUCTION

1  
2 The United States of America (“United States”), on behalf of the United States Department  
3 of Commerce, acting through the National Oceanic and Atmospheric Administration (“NOAA”),  
4 and the United States Department of the Interior; the State of Washington (the “State”) through  
5 the Washington State Department of Ecology; the Suquamish Tribe; and the Muckleshoot Indian  
6 Tribe (collectively, “Plaintiffs”), have filed a complaint in this case against Defendants Vigor  
7 Industrial LLC (“Vigor”) and Exxon Mobil Corporation. (“Exxon Mobil”), (collectively  
8 “Defendants”), pursuant to Section 107 of the Comprehensive Environmental Response,  
9 Compensation and Liability Act of 1980, as amended (“CERCLA”), 42 U.S.C. § 9607; the Model  
10 Toxics Control Act (“MTCA”), chapter 70.105D RCW; Section 311 of the Clean Water Act  
11 (“CWA”), 33 U.S.C. § 1321; and Section 1002(b)(2)(A) of the Oil Pollution Act of 1990 (“OPA”),  
12 33 U.S.C. § 2702(b)(2)(A) for Covered Natural Resource Damages as a result of releases of  
13 hazardous substances and discharges of oil into the Lower Duwamish River (“LDR”) and/or Elliott  
14 Bay (as defined below). The Lower Duwamish River is an urban waterway in and near Seattle,  
15 Washington which flows into Elliott Bay that has been subject to considerable levels of industrial  
16 use throughout its history and into the present. This Consent Decree (the “Decree”) addresses the  
17 claims asserted in the Complaint against the Defendants.  
18  
19  
20

## II. BACKGROUND

21  
22 A. The United States Department of Commerce, acting through NOAA; the United  
23 States Department of the Interior; the Washington Department of Ecology on behalf of the State  
24 of Washington; the Suquamish Tribe, and the Muckleshoot Indian Tribe (collectively, “the  
25 Trustees” and, individually, a “Trustee”), under the authority of Section 107(f) of CERCLA, 42  
26 U.S.C. § 9607(f), Section 1006(b) of OPA, 33 U.S.C. § 2706(b), 40 C.F.R. Part 300, subpart G,  
27  
28

1 and RCW 70.105D.040(2), serve as trustees for natural resources for the assessment and  
2 recovery of damages for injury to, destruction of, or loss of natural resources under their  
3 trusteeship.

4 B. Investigations conducted by the Trustees and others have detected hazardous  
5 substances and oil in the surface water, sediments, soils and groundwater of the Lower  
6 Duwamish River, including but not limited to, arsenic, antimony, cadmium, chromium, copper,  
7 mercury, nickel, lead, zinc, bis(2 ethylhexyl) phthalate, hexachlorobenzene,  
8 hexachlorobutadiene, tributyltin (“TBT”), polychlorinated biphenyls (“PCBs”), and polycyclic  
9 aromatic hydrocarbons (“PAHs”). Overall, the Trustees have documented the presence of over  
10 thirty (30) hazardous substances in the sediments of the LDR.  
11

12 C. The Trustees began assessing damages to natural resources in the LDR in 1990  
13 by finding that hazardous substances and oil had been released into the LDR; that natural  
14 resources had likely been injured by the releases; that data sufficient to pursue a natural resource  
15 damage assessment were available or could likely be obtained at a reasonable cost; and that,  
16 without further action, future response activities would not adequately remedy the resource  
17 injuries. *See, e.g.*, NOAA, Lower Duwamish Waterway Sediment Characterization Study  
18 Report (Dec. 10, 1998), Elliott Bay Trustee Council, Pre-Assessment Screen for LDR  
19 (December 2009), Final Lower Duwamish River NRDA Restoration Plan and Programmatic  
20 Environmental Impact Statement (July 2013), and Final Lower Duwamish River NRDA: Injury  
21 Assessment Plan (March 2019).  
22

23 D. Although the Trustees have initiated, but not yet completed a natural resource  
24 damage assessment for the LDR, the Trustees have developed and analyzed information  
25 sufficient to support settlements that are fair, reasonable and in the public interest.  
26

1 E. In settlement of this action, Defendants Vigor and Exxon Mobil agree, in lieu of  
2 and as equivalent to monetary damages, to construct, develop, monitor and maintain the habitat  
3 restoration projects as described in the Scope of Work attached hereto as Appendix A (“Vigor  
4 Shipyards Habitat Projects” or the “Projects”) at Defendant Vigor’s property located on Harbor  
5 Island adjacent to the West Waterway of the LDR (as described in Appendix B [*Tax Parcels*  
6 *7666702850, 7666702851, 7666702852, and 7671800254*]). As required by this Decree,  
7 Defendants will take measures to ensure that the Project Sites remain available for, and their use  
8 dedicated to, the Projects. Defendants also agree to fund and be responsible for permanent  
9 Stewardship of the Projects. Defendants further agree to reimburse the implementation costs  
10 incurred, and to be incurred, by the Trustees for oversight of the Projects (Section X) and a  
11 portion of the Trustees’ past natural resource damage assessments costs for the LDR (Section  
12 XI).

15 F. Defendant Exxon Mobil, and its predecessors, owned a portion of the property  
16 identified in Appendix B from about 1906 to August 30, 1967. Exxon Mobil’s ownership is  
17 shown on the map attached as Appendix B. During this time period, Exxon Mobil operated a  
18 petroleum storage facility at the property. Exxon Mobil sold the property to Todd Shipyards  
19 Corp. on or around August 30, 1967.

21 G. Defendant Vigor acquired Todd Shipyards Corp. in 2011, and is the parent of  
22 Todd Shipyards Corp. (n/k/a Puget Sound Commerce Center, Inc.), the current owner and  
23 operator of the property identified in Appendix B. Since at least 1967, Todd Shipyards Corp.,  
24 and its parent Vigor, have operated a shipyard for the construction and repair of various types of  
25 vessels at the property.  
26

1 H. Plaintiffs allege in the Complaint that Defendant Vigor is a current owner and/or  
2 operator of, and both Defendants owned and/or operated at the time of the disposal of hazardous  
3 substances, facilities on, adjacent to, or near the LDR within the meaning of 42 U.S.C. § 9607  
4 and RCW 70.105D.040. Plaintiffs allege that hazardous substances have been released and oil  
5 discharged to the LDR from the facilities owned and/operated by Defendants, identified in  
6 Appendix B, through direct discharge or other process discharges that have flowed to the LDR.  
7 The alleged discharges were to “navigable waters” or “adjoining shorelines” within the meaning  
8 of Section 1002(a) of OPA, 33 U.S.C. § 2702(a), and Section 311(b)(3) of the CWA, 33 U.S.C.  
9 § 1321(b)(3). Plaintiffs also allege that investigations have detected hazardous substances in  
10 soils, surface water, groundwater and/or sediments on or in the property or facilities, and some  
11 of these hazardous substances are found in the surface water and sediments of the LDR.  
12 Plaintiffs further allege that hazardous substances released and oil discharged to the LDR from  
13 the facilities owned and/or operated by Defendants have caused injury to, destruction of and  
14 loss of Natural Resources in the LDR under Plaintiffs’ trusteeship, including fish, shellfish,  
15 invertebrates, birds, surface water and sediments, and resources of cultural significance.  
16 Plaintiffs allege that each of them and the public have suffered the loss of natural resource  
17 services (including ecological services as well as direct and passive human use losses) as a  
18 consequence of those injuries.  
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21

22 I. To facilitate resolving natural resource damage claims, relying upon the results of  
23 remedial investigations, regulatory standards, and scientific literature, the Trustees developed an  
24 estimate of the amount of injury to Natural Resources that had occurred as a result of releases of  
25 hazardous substances and discharges of oil to the LDR. The Trustees quantified the effects of  
26 the injuries in terms of the losses of ecological services over affected areas of the LDR and over  
27

1 time, discounted to a present value. Plaintiffs used the term discounted ecological service acre-  
2 years (“DSAYs”) to describe both the scale of the injuries, and the amount of habitat restoration  
3 they are seeking to compensate for the injuries. At this time, for purposes of early settlements,  
4 including this Consent Decree, the Trustees’ estimated total number of DSAYs for the LDR is  
5 5,278.  
6

7 J. Plaintiffs assert that hazardous substance releases and oil discharges to the LDR  
8 have become dispersed and commingled to the extent that the effects of releases or discharges of  
9 one Potentially Responsible Party (“PRP”) cannot be readily distinguished from another’s.

10 Plaintiffs further assert that the circumstances of the LDR contamination make all PRPs who  
11 contributed to the contamination jointly and severally liable for all injuries to Natural Resources  
12 that have resulted from the contamination. As a consequence, Plaintiffs assert the right to  
13 recover for damages and associated damage assessment costs from any Lower Duwamish River  
14 PRP. Without prejudice to their position and solely for purposes of facilitating early settlements  
15 with individual PRPs, the Trustee Council developed a streamlined process for allocating natural  
16 resource ecological damages liability among the PRPs. Plaintiffs have determined that settling  
17 with Defendants for a portion of the natural resource damages attributable to all LDR sources  
18 would result in a fair and equitable resolution of Plaintiffs’ claims. Taking into consideration  
19 prior settlements with other PRPs who bore some liability for hazardous substance contamination  
20 of the LDR and releases of hazardous substances and oil by non-settling parties, Plaintiffs have  
21 agreed to settle their claims against Defendants as provided in this Consent Decree. Plaintiffs  
22 have determined based upon the facts regarding Defendants’ ownership and operations, and  
23 other equitable factors, that Defendants account for 340 of the total estimated DSAYs for the  
24 LDR. By resolving Defendants’ liability in this Consent Decree, the restoration described in the  
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1 attached Scope of Work provides substantial benefits to natural resources earlier than otherwise  
2 would be realized, thereby allowing for earlier recovery of natural resources in the Lower  
3 Duwamish River. Significantly, the location of the restoration is at the mouth of the LDR. This  
4 is a highly industrialized portion of the river with relatively little remaining natural habitat for  
5 juvenile salmon and little land available for addressing this habitat shortage. The restoration to  
6 be implemented under this Consent Decree is particularly valuable because it provides high-  
7 quality habitat for juvenile salmon in a reach of the LDR where such habitat is rare.

9 Considering the location and quality of the habitat provided by the proposed restoration under  
10 the Consent Decree, the geographic extent of that habitat, and the advantages of achieving  
11 restoration sooner and with more certainty than otherwise would be the case, the Trustees have  
12 determined that the Vigor Shipyards Habitat Projects will provide sufficient restoration value to  
13 compensate for Defendants' alleged liability.  
14

15 K. Defendants deny all or portions of the allegations of the Complaint and all or  
16 portions of the allegations contained in Paragraphs H through J of this Section, and dispute  
17 Plaintiffs' methods for estimating total damages and Defendants' allocated share of those  
18 damages. Defendants do not admit any liability to Plaintiffs arising out of the transactions or  
19 occurrences alleged in the Complaint or in this Consent Decree.  
20

21 L. Plaintiffs and Defendants (collectively, the "Parties" and, individually, a "Party")  
22 agree that neither Plaintiffs nor Defendants will use this settlement (including the terms of this  
23 Decree and the basis for the compromise contained in other documents filed in this action in  
24 support of this Decree) in any other forum, whether in litigation, administrative proceedings,  
25 formal or informal negotiations, or otherwise, to resolve, attempt to resolve, or in any way  
26 influence the resolution of, other claims between Plaintiffs and Defendants in the LDR (as  
27

1 defined below); provided, however, that this provision does not limit Plaintiffs or Defendants  
2 from using otherwise available factual information referenced in documents filed in support of  
3 this Decree. The restriction in the preceding sentence applies to, but is not limited to, claims  
4 other than Covered Natural Resources Damages that the United States (on behalf of the United  
5 States Environmental Protection Agency) and the State may have against Defendants under  
6 CERCLA, the Solid Waste Disposal Act (as amended by the Resource Conservation and  
7 Recovery Act), 42 U.S.C. § 6901 et seq., or MTCA in the LDR.

9 M. The Parties agree, and this Court by entering this Consent Decree finds, that this  
10 Decree has been negotiated by the Parties in good faith, that settlement of this matter will avoid  
11 prolonged and complicated litigation between the Parties, that this Decree will expedite the  
12 restoration and protection of natural resources at and near the Lower Duwamish River and Elliot  
13 Bay, that the timely implementation of the projects and payments to be provided under this  
14 Decree constitute appropriate actions necessary to protect and restore the Natural Resources  
15 allegedly injured by releases or threatened releases of hazardous substances or discharges of oil  
16 by Defendants, that such timely actions and expenditures are adequate to redress Defendants'  
17 responsibility for the Covered Natural Resource Damages that are the subject of this proceeding,  
18 and that this Decree is fair, reasonable, and in the public interest.

19 NOW, THEREFORE, it is hereby Ordered, Adjudged and Decreed:  
20

### 21 **III. JURISDICTION AND VENUE**

22  
23  
24 1. This Court has jurisdiction over the subject matter of this action pursuant to 28  
25 U.S.C. §§ 1331, 1345 and 1367, 42 U.S.C. § 9613(b), and 33 U.S.C. § 2717(b). The Court has  
26 personal jurisdiction over the Parties. Solely for the purposes of this Decree and the underlying  
27 Complaint, the Parties waive all objections and defenses that they may have to jurisdiction of the

1 Court or to venue in this District. The Parties shall not challenge the terms of this Decree or this  
2 Court's jurisdiction to enter and enforce this Decree.

#### 3 **IV. PARTIES BOUND**

4 2. This Decree is binding upon the United States, the State, the Suquamish Tribe, the  
5 Muckleshoot Indian Tribe, and upon Defendants and their successors and assigns. Any change  
6 in ownership or corporate or other legal status, including but not limited to any transfer of assets  
7 or real or personal property, shall in no way alter the status or responsibilities of Defendants  
8 under this Decree.  
9

10 3. Defendants shall provide a copy of this Consent Decree to each contractor hired  
11 by Defendants to perform any of the work required by this Consent Decree, and to each person  
12 representing Defendants with respect to any such work, and shall condition all future contracts  
13 entered into by Defendants hereunder upon performance of the work in conformity with the  
14 terms of this Consent Decree. Defendants or their contractors shall provide written notice of the  
15 Consent Decree to all subcontractors hired by Defendants' contractors to perform any portion of  
16 the work. Defendants shall nonetheless be responsible for ensuring that all work performed by  
17 its contractors and subcontractors is performed in accordance with this Consent Decree.  
18  
19

#### 20 **V. DEFINITIONS**

21 4. Unless otherwise expressly provided, terms used in this Decree that are defined in  
22 CERCLA or in regulations promulgated under CERCLA have the meanings assigned to them in  
23 CERCLA or in such regulations. Whenever the terms listed below are used in this Decree or in  
24 any attached appendix, the following definitions will apply:  
25

26 a. "As-built Drawings" means the set of drawings submitted by Defendants  
27 regarding the completed West Waterway Habitat Bench Project and upon completion of the

1 Southwest Yard Habitat Project, which will reflect all changes made in the specifications and  
2 working drawings during the construction process, and show the dimensions, geometry, and  
3 location of all elements of the work completed pursuant to Appendix A.

4 b. “CERCLA” means the Comprehensive Environmental Response, Compensation,  
5 and Liability Act of 1980, as amended, 42 U S C. § 9601, *et seq.*

7 c. “Consent Decree” or “Decree” means this Consent Decree and all attached  
8 appendices identified in Section XXV (Integration/Appendices), and any final plans approved  
9 hereunder. In the event of a conflict between this Consent Decree and any Appendix or plan, the  
10 Consent Decree will control.

11 d. “Covered Natural Resource Damages” means damages, including costs of damage  
12 assessment, recoverable under Section 107 of CERCLA, 42 U.S.C. § 9607; Chapter 70.105D  
13 RCW; Section 311 of the Clean Water Act (“CWA”), 33 U.S.C. § 1321; and Section 1002 of the  
14 Oil Pollution Act of 1990 (“OPA”), 33 U.S.C. § 2702(b) and any other statutory or common law,  
15 for injury to, destruction of, loss of, loss of use of, or impairment of Natural Resources, including,  
16 but not limited to: (i) the costs of assessing such injury, destruction, or loss or impairment of  
17 natural resources; (ii) the costs of restoration, rehabilitation, or replacement of injured or lost  
18 natural resources or of acquisition of equivalent resources; (iii) the costs of planning such  
19 restoration activities; (iv) compensation for injury, destruction, loss, impairment, diminution in  
20 value, or loss of use of natural resources; and (v) each of the categories of recoverable damages  
21 described in 43 C.F.R. § 11.15, and applicable State or tribal law, resulting from releases of  
22 hazardous substances or discharges of oil to the LDR and/or Elliott Bay, or adjoining shorelines,  
23 where such release or discharge occurred on or before the Effective Date of this Consent Decree,  
24 at or from the property identified in Appendix B. Damages, injury to, destruction of, loss of, loss

1 of use of, or impairment of Natural Resources resulting from releases of hazardous substances or  
2 discharges of oil originating from Defendants’ operations or activities outside of the property  
3 identified in Appendix B are not included in Covered Natural Resource Damages, even if those  
4 hazardous substances or discharges of oil reach the LDR by flowing over, under, or through any  
5 portion of the property identified in Appendix B.

6  
7 e. “Day” means a calendar day. In computing any period of time under this Consent  
8 Decree, where the last day falls on a Saturday, Sunday, or federal holiday, the period of time will  
9 run until the close of business of the next working day. “Working day” means a day other than a  
10 Saturday, Sunday, or Federal holiday.

11 f. “Defendants” means Vigor Industrial LLC and Exxon Mobil Corporation.

12  
13 g. “Discounted Service-Acre Year” or “DSAY” means the amount of a specific suite  
14 of ecological services determined to be produced per acre of a given type of habitat over a period  
15 of years, the total of which are discounted to a present value.

16 h. “Elliott Bay” means any portion of Elliott Bay (including the shoreline, intertidal  
17 areas, tributaries, estuaries and bottom sediments) in the State of Washington where hazardous  
18 substances originating from the property identified in the definition of Covered Natural Resource  
19 Damages and Appendix B have come to be located.

20  
21 i. “Exxon Mobil” shall mean Exxon Mobil Corporation.

22  
23 j. “Lower Duwamish River” or “LDR” means any portion of the Duwamish  
24 Waterway (including the shoreline, intertidal areas, tributaries, estuaries and bottom sediments) in  
25 the State of Washington where hazardous substances originating from the properties identified in  
26 the definition of Covered Natural Resource Damages and Appendix B have come to be located.

27 The LDR includes the in-waterway portions of three Superfund Sites: the Harbor Island Superfund

1 Site (located south of downtown Seattle, Washington, including the East Waterway and West  
2 Waterway that flow from the south end of Harbor Island north to Elliott Bay), the Lower  
3 Duwamish Waterway Superfund Site (approximately five miles of the Duwamish River from the  
4 southern tip of Harbor Island south to the area around the Norfolk Combined Sewer  
5 Overflow/Storm Drain in Tukwila, Washington), and the Lockheed West Superfund Site (areas in  
6 and around the site formerly known as Lockheed Shipyard No. 2, located near the confluence of  
7 the West Waterway and Elliott Bay).

9 k. “MTCA” means the Model Toxics Control Act, Chapter 70.105D RCW.

10 l. “Natural Resources” means that definition as provided in 42 U.S.C. § 9601(16).

11 m. “Parties” means the United States, the State of Washington, the Suquamish Tribe,  
12 the Muckleshoot Indian Tribe, and Defendants.

13 n. “Plaintiffs” means the United States, the State, the Suquamish Tribe, and the  
14 Muckleshoot Indian Tribe.

15 o. “Projects” or “Vigor Shipyards Habitat Projects” means all of the work and other  
16 commitments as described in Appendix A.

17 p. “Project Sites” means the areas outlined for the Projects in Appendix A.

18 q. “Stewardship” means actions intended to preserve, protect or maintain the  
19 Projects and the Project Sites as identified in Appendix A, including (a) maintaining, restoring or  
20 replacing the ecological function of the Projects; and (b) maintaining, restoring or replacing  
21 physical components of the Projects.

22 r. “Success Criteria” are the standards for performance of the Projects as specified  
23 in the Scope of Work attached as Appendix A.

1 s. “Trustees” mean the United States Department of Commerce, acting through  
2 NOAA; the United States Department of the Interior; the Washington State Department of  
3 Ecology, on behalf of the State of Washington; the Suquamish Tribe; and the Muckleshoot  
4 Indian Tribe.

5 t. “United States” shall mean the United States of America and each department,  
6 agency and instrumentality of the United States, including the United States Department of  
7 Commerce and the United States Department of the Interior.

8 u. “Vigor Industrial LLC” shall mean Defendant Vigor.

9  
10 **VI. GENERAL PROVISIONS**

11 5. This Decree is not, and shall not be construed to be, a permit issued pursuant to  
12 any law. All activities undertaken by Defendants pursuant to this Decree shall be performed in  
13 accordance with the requirements of all applicable laws and permits. Where any portion of the  
14 activities undertaken pursuant to this Decree requires a federal, state or local permit or approval,  
15 Defendants shall submit timely and complete applications and take all other actions necessary to  
16 obtain such permits or approvals. Defendants may seek relief under the provisions of Section  
17 XV (Force Majeure) for any delay in or prevention of the performance of the obligations of this  
18 Decree resulting from a failure to obtain, or a delay in obtaining, any federal or state permit or  
19 approval required for such performance, including but not limited to the deadlines set forth in  
20 Paragraph 10 and in Appendix A, provided that they have submitted timely and complete  
21 applications and taken all other actions necessary to obtain all such permits or approvals.

22 6. Defendants shall ensure that all work performed under this Decree shall be  
23 conducted as set forth in the Scope of Work attached as Appendix A hereto to achieve the  
24 objective of constructing and maintaining the Projects to meet the Success Criteria identified in

1 Appendix A. If the Trustees determine that Defendants are not complying with the requirements  
2 set forth in the Decree and Appendix A, the Trustees shall provide written notice to Defendants  
3 specifying the basis for their determination of noncompliance. Defendants may correct the  
4 noncompliance or invoke the dispute resolution procedures set forth in Section XIII. The  
5 Trustees may require Defendants to take actions to alter, suspend or cease ongoing activities, and  
6 to alter, postpone or refrain from taking proposed actions, as are necessary to ensure compliance  
7 with the terms of this Decree and any plans or proposals adopted hereunder. If Defendants  
8 dispute any such requirements imposed by the Trustees, Defendants may invoke the dispute  
9 resolution procedures set forth in Section XIII.  
10

11 7. Plaintiffs do not, by their consent to the entry of this Decree, warrant or aver in  
12 any manner that Defendants' compliance with this Decree will result in compliance with  
13 CERCLA or any other law. The Parties agree that Defendants are responsible for complying  
14 with all applicable federal, state, tribal and local laws, regulations and permits.  
15

16 8. All approvals and disapprovals made by the Trustees under this Consent Decree  
17 shall be communicated to Defendants by one of the Trustees on behalf of all the Trustees.  
18 Except as specifically provided otherwise herein, all such communications shall be in writing  
19 and shall indicate that the communication is on behalf of all Trustees.  
20

## 21 VII. RESTORATION PROJECTS

22 9. Defendants shall fund and perform all activities in accordance with the terms set  
23 out in the Scope of Work attached as Appendix A for the two Vigor Shipyards Habitat Projects:  
24 the West Waterway Habitat Bench Project (construction completed by Defendant Vigor in 2006,  
25 to be monitored and maintained by Defendants pursuant to this Decree) and the Southwest Yard  
26  
27



1 Habitat Project (to be designed, constructed, monitored and maintained by Defendants pursuant  
2 to this Decree).

3 **Design and Construction Activities for the Southwest Yard Habitat Project**

4 10. Construction Schedule and Contingencies.

5 a. After completion of necessary design work for the Southwest Yard Habitat  
6 Project, including timely submission of design reports to the Trustees for review as described in  
7 Appendix A, and after the Trustees' approval in writing of the final design plan, Defendant  
8 Vigor shall commence construction on the Project in accordance with the Schedule set forth in  
9 Table 4 of Appendix A. The Trustees' written authorization will be provided after: (1) the  
10 Trustees verify that EPA has reviewed and approved Defendants' Remedial Action Work Plan  
11 (described in Appendix A) as appropriate and consistent with the requirements of: the CERCLA  
12 consent decree entered in *United States of America v. Todd Pacific Shipyards Corp.* (W.D.  
13 Wash.), Civil Action No. CV03-1179; and any response action decisions for the LDR that EPA  
14 may have made or may or expects to make that may affect the Projects; and (2) other reviews  
15 and determinations by the Trustees, including but not limited to those identified in Appendix A.

16 b. Defendants shall complete construction of the Southwest Yard Habitat Project  
17 within sixty (60) months after the Effective Date of this Decree. If Defendants have not  
18 completed construction within seventy-two (72) months after the Effective Date of this Decree,  
19 then Defendants shall either (i) pay to the Trustees the sum of \$300,000 as compensation for the  
20 additional delay in restoration of Natural Resources, or (ii) perform additional restoration work  
21 outside of the Project Sites agreed upon in writing by Defendants and the Trustees. For each  
22 subsequent twelve-month period in which Defendants have not completed construction of the  
23 Projects, Defendants shall either (i) pay to the Trustees the sum of \$300,000 as compensation for

1 the additional delay in restoration of Natural Resources, or (ii) perform additional restoration  
2 work outside of the Project Sites agreed upon in writing by Defendants and the Trustees.  
3 Defendants' obligations under this subparagraph are in addition to any other obligations or  
4 applicable penalties under this Decree, including Section XIV (Stipulated Penalties).

5  
6 11. Within sixty (60) days after completion of all construction, installation or  
7 enhancement activities for the Southwest Yard Habitat Project, pursuant to the approved final  
8 design plan, such that the Project has been placed in operation and is expected to perform and  
9 function as designed, Defendants shall submit As-Built Drawings with a written Notice of  
10 Completion of Construction to the Trustees. The Trustees shall review the results of the  
11 development of the Project to determine whether the Project has been constructed in accordance  
12 with, and as designed to meet the Success Criteria set forth in, Appendix A. Within sixty (60)  
13 days after receiving the Notice of Completion of Construction, the Trustees shall submit to  
14 Defendants either (a) a written notice identifying specific deficiencies the Trustees determine  
15 must be satisfied for the Project to be completed in accordance with Appendix A (Notice of  
16 Deficiencies); or (b) a written notice of the Trustees' determination that the Project has been so  
17 completed (Notice of Approval of Completion of Construction). The date of the Trustees'  
18 Notice of Approval of Completion of Construction shall constitute the "Construction Completion  
19 Date." Within sixty (60) days of receipt of a Notice of Deficiencies, or as otherwise agreed to in  
20 writing by the Trustees, Defendants shall correct the identified deficiencies and complete the  
21 Project in accordance with Appendix A, and submit to the Trustees an amended Notice of  
22 Completion for review and response in accordance with this Paragraph. Any delay in  
23 completing construction of the Project as a result of the operation of this Paragraph shall not in  
24  
25  
26  
27

1 and of itself constitute grounds for relief from the requirement to pay compensation under  
2 Paragraph 10(b) of this Section or stipulated penalties under Section XIV for compliance delays.

3 **Initial Maintenance and Monitoring of the Vegetation and Habitat of the Projects**

4 12. Concurrent with the submission of the Final Design Package, Defendants shall  
5 develop and submit to the Trustees for their review and approval a Monitoring and Maintenance  
6 Plan, as further described in Table 4 of Appendix A, to monitor and maintain the vegetation and  
7 habitat of the Projects to meet the Success Criteria set forth in Appendix A for a period of ten  
8 (10) years from the Construction Completion Date of the Southwest Yard Habitat Project,  
9 including any needed Contingency Measures or Adaptive Management Plans as directed by the  
10 Trustees. Upon completion of the ten-year period, Defendants shall provide written Notice of  
11 Completion of Initial Maintenance and Monitoring Obligations to the Trustees in accordance  
12 with Section XXII (Notices and Submissions). Within forty-five (45) days after receiving the  
13 Notice of Completion of Initial Maintenance and Monitoring Obligations, the Trustees shall  
14 submit to Defendants either (a) a written notice identifying specific deficiencies the Trustees  
15 determine must be satisfied for the initial maintenance and monitoring obligations to be  
16 completed in accordance with Appendix A (Notice of Deficiencies); or (b) a written notice of the  
17 Trustees' determination that the initial maintenance and monitoring obligations are completed  
18 (Approval of Completion of Initial Maintenance and Monitoring Obligations). In the event the  
19 Trustees identify, in a Notice of Deficiencies, specific deficiencies with Defendants' compliance  
20 with its obligations, Defendants shall correct the identified deficiencies and complete the  
21 Projects in accordance with Appendix A. Within sixty (60) days of Defendants' receipt of a  
22 Notice of Deficiencies from the Trustees, or as otherwise agreed to in writing by the Trustees,  
23 Defendants shall complete all corrective actions and submit to the Trustees an amended Notice  
24

1 of Completion of Initial Maintenance and Monitoring Obligations for review and response in  
2 accordance with this Paragraph. The date of the Trustees' Approval of Completion of Initial  
3 Maintenance and Monitoring Obligations for the Projects shall constitute the "Initial  
4 Maintenance and Monitoring Obligations Completion Date."

5 **Long-term Stewardship of Developed Vegetation and Habitat for the Projects**

6  
7 13. The Parties' intention is that the ecological functions provided by the Projects be  
8 maintained in perpetuity. In order to achieve permanent preservation of the Project Sites, and all  
9 ecological functions provided by the Projects be maintained in perpetuity, Defendant Vigor shall  
10 grant and record environmental covenants for the Project Sites, including for its property, and  
11 obtain necessary agreements to grant and record such environmental covenant(s) for any  
12 property owned by any other party, including the State, in the form set forth in Appendix C for  
13 Defendant Vigor's property, and in a form reviewed and approved by the Trustees for property  
14 owned by any other party, including the State, and shall take all other appropriate actions  
15 necessary to ensure that the Project Sites will not be used in a manner inconsistent with the  
16 requirements of this Decree. Defendant Vigor shall grant and record such environmental  
17 covenants within sixty (60) days of the Construction Completion Date for the Southwest Yard  
18 Habitat Project.  
19  
20

21 14. Defendants shall be responsible for maintaining vegetation and other habitat  
22 attributes, for controlling invasive vegetation and debris removal, and for undertaking corrective  
23 actions to address any negative impacts to the Projects that affect the ecological services  
24 provided by the Projects, as set forth more fully in Appendix A and the Maintenance and  
25 Monitoring Plan approved by the Trustees. For purposes of this Decree, Defendants'  
26 responsibility for active maintenance and corrective action of both Projects shall extend twenty  
27

1 (20) years from the Initial Maintenance and Monitoring Obligations Completion Date, or sooner  
2 if the Trustees agree that a “force majeure” event prevents corrective action or further  
3 maintenance. Negative impacts identified in this Paragraph include events with a foreseeable  
4 probability of occurrence (such as, for example, the beaching of an abandoned barge) but do not  
5 include “force majeure” events.  
6

7 15. Defendants shall be responsible for continued maintenance and corrective actions  
8 for Projects in accordance with Paragraph 14, whether or not Defendant Vigor owns the Project  
9 Sites. The Trustees recognize that the Project Sites may include some property that is owned by  
10 other parties including, but not limited to, the State. Defendants recognize that they are solely  
11 responsible for securing the cooperation of other property owners, including but not limited to  
12 the State, in order to successfully complete and maintain the Projects in accordance with  
13 Appendix A. Any inability of Defendants to successfully complete or maintain the Projects in  
14 accordance with Appendix A resulting from disputes with other property owners, including but  
15 not limited to the State, shall not constitute a “force majeure” event.  
16  
17

18 16. If Defendant Vigor transfers ownership of any property within the Project Sites  
19 prior to the expiration of Defendants’ obligations in Paragraph 14, such transfer shall not affect  
20 or lessen Defendants’ obligations under that Paragraph, or any other provision of this Decree,  
21 and as a condition of any such transfer, the entity to which any property is transferred shall be  
22 required to provide Defendants with all access necessary to fulfill Defendants’ responsibilities  
23 under Paragraph 14. Within sixty (60) days prior to any proposed transfer of property within the  
24 Project Sites, Defendant Vigor shall provide the Trustees with written notice of the proposed  
25 transfer, identifying the entity that will own the property, certifying that Defendant Vigor  
26  
27

1 provided a copy of this Decree to such entity and providing a copy of the proposed access  
2 agreement for review and approval by the Trustees.

3 **General Project Development Provisions**

4 17. Defendants shall not take any action that is inconsistent with this Decree and that  
5 would adversely affect the Projects.

6 18. Defendants shall undertake all activities required by applicable law to address  
7 cultural resource issues associated with the Projects, including, as applicable, consultation with  
8 tribes and the Washington State Department of Archaeology and Historic Preservation,  
9 conducting a background and project review by an archaeologist who meets the Department of  
10 Interior's professional qualification standards at 36 C.F.R. Part 61, and conducting cultural  
11 resource surveys or monitoring activities.  
12

13 19. The Trustees may conduct additional work themselves, at their own expense, on  
14 the Project Sites. If such work is conducted prior to completion of initial construction by  
15 Defendants, the Trustees will conduct any such work in a manner that does not hinder  
16 Defendants' timely completion of the Projects or otherwise interfere with the performance of  
17 Defendants' obligations under this Decree. Prior to performing additional work pursuant to this  
18 Consent Decree, the Trustees shall prepare and provide to Defendants a Health and Safety Plan.  
19

20 **Financial Assurances**

21 20. Construction of the Southwest Yard Habitat Project. Based upon representations  
22 and assurances made by Defendants, the Trustees have no reason to believe that Defendants  
23 presently do not have the financial ability to perform their obligations under Paragraph 10 of this  
24 Decree to construct the Southwest Yard Habitat Project. On the first anniversary of the Effective  
25 Date, Defendants shall demonstrate their financial ability to discharge their obligations by  
26

1 submitting to the Trustees copies of Defendant Exxon Mobil's most recent Form 10-K Annual  
2 Report and equivalent annual financial information for Defendant Vigor. Each year thereafter  
3 until the Trustees issue a Notice of Approval of Construction Completion in accordance with  
4 Paragraph 10, Defendants shall submit their most recent Form 10-K Annual Report or annual  
5 financial information to the Trustees within 30 days after filing of such report or completion of  
6 such information.  
7

8 21. In the event that the Trustees determine that the financial representations and  
9 assurances provided by the Form 10-K Annual Reports and/or other information available to  
10 them do not demonstrate Defendants' ability to complete construction of the Project, then  
11 Defendants shall establish and maintain financial assurance in the amount then needed to fulfill  
12 their remaining obligations to construct the Project in one or more of the mechanisms listed  
13 below, and satisfactory to the Trustees. Defendants may use multiple mechanisms only if the  
14 mechanisms used in combination are limited to surety bonds guaranteeing payment, letters of  
15 credit, trust funds, and/or insurance policies:  
16  
17

18 a. A surety bond guaranteeing construction of the Project that is issued by a  
19 surety company among those listed as acceptable sureties on federal bonds as set forth in  
20 Circular 570 of the U.S. Department of the Treasury;  
21

22 b. An irrevocable letter of credit, payable to or at the direction of the  
23 Trustees, that is issued by an entity that has the authority to issue letters of credit and  
24 whose letter-of-credit operations are regulated and examined by a federal or state agency;  
25

26 c. A trust fund established for the benefit of the Trustees that is administered  
27 by a trustee for the fund (and where the trustee for the fund is not a "Trustee" as defined

1 in Paragraph 4.s) that has the authority to act as a trustee for the fund and whose trust  
2 operations are regulated and examined by a federal or state agency;

3 d. A policy of insurance that provides the Trustees with acceptable rights as  
4 beneficiaries thereof and that is issued by an insurance carrier that has the authority to  
5 issue insurance policies in the applicable jurisdiction and whose insurance operations are  
6 regulated and examined by a federal or state agency;

7  
8 e. A demonstration that Defendants meet the relevant financial test criteria of  
9 40 C.F.R. § 264.143(f); or

10  
11 f. A guarantee to construct the Project executed in favor of the Trustees by  
12 one of the following: (1) a direct or indirect parent company of a Defendant; or (2) a  
13 company that has a “substantial business relationship” (as defined in 40 C.F.R. §  
14 264.143(h)) with a Defendant; provided, however, that any company providing such a  
15 guarantee must demonstrate to the Trustees’ satisfaction that it meets the relevant  
16 financial test criteria of 40 C.F.R. § 264.143(f).  
17  
18

19 22. Escrow Account for Monitoring, Maintenance and Long-term Stewardship of the  
20 Projects. In order to ensure Defendants’ completion of its maintenance, monitoring and long-  
21 term Stewardship requirements set forth in this Section, within forty-five (45) days of the  
22 Trustees’ authorization to commence construction pursuant to Paragraph 10 of this Decree,  
23 Defendants shall establish an Escrow Account for Maintenance, Monitoring and Long-term  
24 Stewardship of the Restoration Projects in the amount of \$300,000 and in the form set forth in  
25  
26  
27



1 Appendix D, and shall maintain such Escrow Account until released as set forth in this Section,  
2 such that the Escrow Account is legally binding and fully effective.

3  
4 23. Defendants shall diligently monitor the adequacy of the Escrow Account and any  
5 financial assurance mechanism required by Paragraph 21. If any Defendant becomes aware of  
6 any information indicating that the amount or form of the Escrow Account or any financial  
7 assurance mechanism required by Paragraph 21 is inadequate or otherwise no longer satisfies the  
8 requirements of this Section, such Defendant shall notify the Trustees of such information within  
9 seven (7) days. If the Trustees determine that the amount or terms of the Escrow Account or any  
10 financial assurance mechanism required by Paragraph 21 is inadequate or otherwise no longer  
11 satisfies the requirements of this Section, the Trustees will provide written notice to the  
12 Defendants of such determination. Defendants shall, within thirty (30) days after notifying the  
13 Trustees or receiving written notice from the Trustees under this Paragraph, secure and submit to  
14 the Trustees for approval a proposal for a revised Escrow Account or financial assurance  
15 mechanism required by Paragraph 21 that satisfies the requirements of this Section. The Trustees  
16 may extend this deadline for such time as is reasonably necessary for the Defendants, in the  
17 exercise of due diligence, to secure and submit to the Trustees a proposal for a revised Escrow  
18 Account or financial assurance mechanism not to exceed sixty (60) days. Defendants shall follow  
19 the procedures of Paragraph 24 in seeking approval of, and submitting documentation for, the  
20 revised Escrow Account or financial assurance mechanism. Defendants' inability to secure  
21 financial assurance in accordance with this Section does not excuse performance of any other  
22 obligation under this Decree.  
23  
24  
25  
26  
27

1           24.     Modification of Amount, Form, or Terms of the Escrow Agreement or Financial  
2 Assurance Mechanism (if required by Paragraph 21). Defendants may submit, on any  
3 anniversary of the Effective Date of this Decree or at any other time agreed to by the Parties, a  
4 request to reduce the amount, or change the form or terms, of the Escrow Account or any  
5 financial assurance mechanism required by Paragraph 21. Any such request must be submitted to  
6 the Trustees in accordance with this Section, and must include an estimate of the cost of the  
7 remaining work, an explanation of the bases for the cost calculation, and a description of the  
8 proposed changes, if any, to the form or terms of the Escrow Account or financial assurance  
9 mechanism. The Trustees will notify Defendants in writing of their decision to approve or  
10 disapprove a requested reduction or change pursuant to this Paragraph. Defendants may reduce  
11 the amount of the Escrow Account or financial assurance mechanism only in accordance with:  
12 (a) the Trustees' approval; or (b) if there is a dispute, the agreement or final judicial decision  
13 resolving such dispute under Section XIII (Dispute Resolution). Defendants may change the  
14 form or terms of the Escrow Account or financial assurance mechanism only in accordance with  
15 the Trustees' approval. Any decision made by the Trustees on a request submitted under this  
16 Paragraph to change the form or terms of the Escrow Account or financial assurance mechanism  
17 shall not be subject to challenge by Defendants pursuant to the dispute resolution provisions of  
18 this Decree or in any other forum. Within thirty (30) days after receipt of the Trustees' approval  
19 of, or the agreement or decision resolving a dispute relating to, the requested modifications  
20 pursuant to this Paragraph, Defendants shall submit to the Trustees documentation of the  
21 reduced, revised, or alternative Escrow Account or financial assurance mechanism.  
22  
23  
24  
25

26           25.     Access to the Escrow Account or Financial Assurance (if required by  
27 Paragraph 21).

1           a.     If the Trustees determine that Defendants have ceased, or are seriously late  
2 or deficient in performing, the monitoring, maintenance and long-term Stewardship obligations  
3 for the Projects set forth in this Section then, in accordance with Paragraph 22 the Trustees are  
4 entitled to: (1) implementation of the monitoring, maintenance and long-term Stewardship  
5 obligations for the Projects set forth in this Section and/or (2) require that any funds guaranteed  
6 be paid in accordance with Paragraph 25(e). If a financial assurance mechanism is required under  
7 Paragraph 21, and the Trustees determine that Defendants have ceased, or are seriously late or  
8 deficient in constructing the Southwest Yard Habitat Project, in accordance with Paragraph 21  
9 the Trustees are entitled to: (1) completion of construction of the Project as set forth in this  
10 Decree, including Appendix A and/or (2) require that any funds guaranteed be paid in  
11 accordance with Paragraph 25(e).  
12  
13

14           b.     If the Trustees make such determination under Paragraph 25(a), the  
15 Trustees may issue a written notice (“Access to Escrow or Access to Financial Assurance  
16 Notice”) to Defendants. Any Access to Escrow or Access to Financial Assurance Notice issued  
17 by the Trustees will specify the grounds upon which such notice was issued and will provide  
18 Defendants an opportunity to remedy the deficiencies specified in the Notice. Defendants shall  
19 remedy, to the Trustees’ satisfaction, the deficiencies set forth in the Notice within fifteen (15)  
20 days of receipt of such notice.  
21  
22

23           i.     If Defendants have not remedied to the Trustees’ satisfaction the  
24 deficiencies set forth in the Notice within fifteen (15) days of Defendants’ receipt  
25 of such notice, the Trustees may at any time thereafter exercise their right of  
26 Access to the Escrow Account or financial assurance mechanism required by  
27

1 Paragraph 21 pursuant to this Section as the Trustees deem necessary to  
2 implement the monitoring, maintenance and long-term Stewardship obligations or  
3 complete construction of the Southwest Yard Habitat Project.

4  
5 ii. Except as specifically provided elsewhere in this Decree, Defendants may  
6 invoke the procedures set forth in Section XIII (Dispute Resolution), to dispute  
7 the Trustees' exercise of their right of Access to the Escrow Account or financial  
8 assurance mechanism required by Paragraph 21 under this Paragraph. However,  
9 notwithstanding Defendants' invocation of such dispute resolution procedures,  
10 and during the pendency of any such dispute, the Trustees may in their sole  
11 discretion commence and continue to exercise their right of Access to the Escrow  
12 Account or financial assurance mechanism until the earlier of (1) the date that  
13 Defendants remedy, to the Trustees' satisfaction, the circumstances giving rise to  
14 the Trustees' issuance of the Access to Escrow or Access to Financial Assurance  
15 Notice, or (2) the date that a final decision is rendered in accordance with Section  
16 XIII (Dispute Resolution) requiring the Trustees to terminate such exercise of  
17 their right of Access to the Escrow Account or financial assurance mechanism.  
18 Following either event, the Trustees shall cease obligating any further funds from  
19 the Escrow Account or financial assurance mechanism, unless the final Dispute  
20 Resolution decision allows the Trustees to continue obligating or spending funds,  
21 but shall not be required to repay any funds already obligated or spent by the  
22 Trustees.  
23  
24  
25  
26  
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28

1 c. If the Trustees are notified by the escrow agent as appointed under the  
2 Escrow Account required by Paragraph 22, or any financial assurance mechanism required by  
3 Paragraph 21, that it intends to resign and/or cancel the Escrow Account or financial assurance  
4 mechanism required by Paragraph 21, and the Defendants fail to provide an alternative Escrow  
5 Account or financial assurance mechanism in accordance with Paragraph 23 at least thirty (30)  
6 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid in  
7 full to the Trustees prior to cancellation in accordance with Paragraph 25(e).  
8

9  
10 d. If, upon issuance of an Access to Escrow Account or Access to Financial  
11 Assurance Notice by the Trustees, the Trustees are unable for any reason to promptly secure the  
12 resources guaranteed under the Escrow Account or financial assurance mechanism, whether in  
13 cash or in kind, to continue and complete the Projects, then the Trustees are entitled to demand  
14 an amount, as determined by the Trustees, sufficient to cover the cost of the remaining work to  
15 be performed. Defendants shall, within fourteen (14) days of such demand, pay the amount  
16 demanded as directed by the Trustees.  
17

18  
19 e. Any amounts required to be paid under this Paragraph shall be, as directed  
20 by the Trustees: (i) paid to the Trustees in order to facilitate the completion of the work by the  
21 Trustees or by another person; or (ii) deposited into an interest-bearing account, established at a  
22 duly chartered bank or trust company that is insured by the FDIC, in order to facilitate the  
23 completion of the work by another person.  
24

25 26. Release, Cancellation, or Discontinuation of the Escrow Account or Financial  
26 Assurance Mechanism (if required by Paragraph 21). Defendants shall not release, cancel, or  
27 discontinue the Escrow Account or financial assurance mechanism, except as provided pursuant

1 to this Paragraph, and as set forth in Appendix D. Defendants may release, cancel, or  
2 discontinue the Escrow Account or financial assurance mechanism only: (a) after the expiration  
3 of the time period set forth in Paragraph 14 for the Escrow Account required by Paragraph 22,  
4 and after the Construction Completion Date for the financial assurance mechanism if required by  
5 Paragraph 21, and in accordance with the Trustees' written notice of approval of such release,  
6 cancellation, or discontinuation; or (b) if there is a dispute regarding the release, cancellation or  
7 discontinuance of the Escrow Account or financial assurance mechanism, in accordance with the  
8 agreement or final judicial decision resolving such dispute under Section XIII (Dispute  
9 Resolution).

#### 12 **VIII. ACCESS TO INFORMATION AND PROJECT SITES**

13  
14 27. To facilitate the Trustees' oversight responsibilities, Defendant Vigor will provide  
15 the Trustees full access to the Project Sites for purposes of inspecting or observing Defendants'  
16 progress in implementing the Projects required under this Decree.

17 28. Commencing upon the date of lodging of this Decree, and in accordance with  
18 Appendix C, Defendant Vigor agrees to provide the Trustees and their contractors access at all  
19 reasonable times to the Project Sites and to any property under the control of Defendant Vigor to  
20 which access is required for the oversight or implementation of this Decree. This right of access  
21 does not include a right to enter buildings. The Trustees shall give notice prior to access. Each  
22 Trustee shall have the authority to enter freely and move about such property at all reasonable  
23 times for purposes of overseeing the requirements of this Decree, including, but not limited to:

24 a. Monitoring and assessing progress on the planning, development, maintenance  
25 and monitoring of the Projects;



1 presumed unless the Trustees notify Defendants in writing of their objection to the proposed  
2 selection or change within thirty (30) days of Defendants' written selection notice.

3 **X. REIMBURSEMENT OF RESTORATION IMPLEMENTATION COSTS**

4 31. Defendants agree to reimburse the Trustees' costs incurred in implementing and  
5 overseeing the Projects described in Appendix A to this Decree. The period during which the  
6 Trustees will incur implementation costs ends on the ending date of Defendants' responsibility  
7 for active maintenance and corrective action, as set forth in Paragraph 14. Defendants shall  
8 reimburse these costs as follows: Each year, beginning on the Effective Date of this Decree, the  
9 Trustees shall provide Defendants with an invoice detailing their costs through the prior calendar  
10 year of implementing and overseeing the Projects and provide a non-binding estimate of the  
11 Trustees' anticipated costs for the next one-year period. Within sixty (60) days of receipt of the  
12 Trustees' invoice, Defendants shall reimburse the Trustees for those costs. Defendants shall  
13 make all such payments as directed by the Trustees, and provide notice of such payments, in  
14 accordance with Section XVI (Notices and Submissions). If Defendants believe that any of the  
15 Trustees' invoiced costs were not incurred in implementing and overseeing the Projects,  
16 Defendants may invoke the Dispute Resolution provisions of Section XIII as to the disputed  
17 costs only; any costs for which Defendants do not invoke Dispute Resolution shall be paid within  
18 sixty (60) days of receipt of the Trustees' invoice.

19 **XI. PAST ASSESSMENT COST REIMBURSEMENT**

20 32. Within thirty (30) days of the Effective Date of this Decree, Defendants will pay a  
21 total of \$815,816.59 for past assessment costs incurred by the Trustees (for NOAA and DOI  
22 through September 28, 2019; for the State, through September 30, 2019; and for the Suquamish  
23 Tribe, through November 15, 2018), as described below.



1 a. Payment for Assessment Costs Incurred by the United States.

2 (1) Within thirty (30) days after the Effective Date, Defendants shall pay a total of  
3 \$754,976.21 to the United States for assessment costs incurred by the United States. Payment shall  
4 be made by FedWire Electronic Funds Transfer (“EFT”) to the U.S. Department of Justice account,  
5 in accordance with instructions provided to Defendants by the Financial Litigation Unit (“FLU”)  
6 of the United States Attorney’s Office for the Western District of Washington after the Effective  
7 Date. The payment instructions provided by the FLU will include a Consolidated Debt Collection  
8 System (“CDCS”) number, which Defendants shall use to identify all payments required to be  
9 made in accordance with this Decree. The FLU will provide the payment instructions to:  
10

11  
12 Alan Sprott  
13 Vice President  
14 Vigor Industrial LLC  
15 5555 N. Channel Avenue  
16 Portland, OR 97217  
17 (503) 247-1828  
18 [Alan.Sprott@vigor.net](mailto:Alan.Sprott@vigor.net)

19 on behalf of Defendants. Defendants may change the individuals to receive payment instructions  
20 on their behalf by providing written notice of such change to the United States in accordance with  
21 Section XVI (Notices and Submissions).

22 (2) Of the total amount to be paid by Defendants pursuant to this  
23 Subparagraph 32.a.(1):

- 24 (a) \$172,210.86 shall be deposited in the DOI NRDAR Fund, to be applied toward  
25 natural resource damage assessment costs incurred by DOI.  
26 (b) \$582,765.35 shall be deposited in the NOAA DARR Fund, to be applied toward  
27 natural resource damage assessment costs incurred by NOAA.

1           b.       Payment for Assessment Costs Incurred by the State. Within thirty (30) days after  
2 the Effective Date, Defendants shall pay a total of \$40,400.90 to the State of Washington for  
3 assessment costs incurred by the State. Payment shall be made by certified check, bearing the  
4 notation “Natural Resource Damage assessments costs applied to accounts Todd Hi NRDA is  
5 1T321 and EB Trustee Council 1T323” and made payable and addressed as follows:  
6

7 Payee:           State of Washington/Department of Ecology  
8 Address:        State of Washington/Department of Ecology  
9                    Attention: Cashiering Unit  
10                   P.O. Box 47611  
11                   Lacey, WA 98504-7611

12           c.       Payment for Assessment Costs Incurred by the Suquamish Tribe. Within thirty (30)  
13 days after the Effective Date, Defendants shall pay a total of \$20,439.48 to the Suquamish Tribe  
14 for assessment costs incurred by the Tribe. Payment shall be made by check to the Suquamish  
15 Tribe bearing the notation “Lower Duwamish River NRDA” and mailed to the address as follows:

16 Address:        Suquamish Tribe  
17                    Attention: Finance Director  
18                   P.O. Box 498  
19                   Suquamish, WA 98392

20           33.       Payment for Interim Costs. The Trustees shall provide Defendants with a bill  
21 requiring payment of costs incurred by the Trustees after the dates identified in Paragraph 32  
22 through the Effective Date of the Consent Decree. Within 30 days of receiving the bill requiring  
23 payment of costs from the Trustees, Defendants shall pay the costs in accordance with the  
24 procedures set forth in Paragraphs 32.a-d and 34.

25           34.       At the time of each payment pursuant to Paragraphs 32 and 33, Defendants will  
26 send notice that payment has been made to the Trustees and DOJ in accordance with Section XVI  
27

1 (Notices and Submissions). Such notice will reference Lower Duwamish River NRDA, DOJ case  
2 number 90-11-3-07227/4 and the civil action number.

### 3 **XII. INTEREST ON LATE PAYMENTS**

4 35. If Defendants fail to make any payment pursuant to this Decree by the required  
5 due date, in addition to the stipulated penalties as set forth in Section XIV, interest shall be  
6 assessed at the rate specified for interest on investments of the EPA Hazardous Substance  
7 Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year in  
8 accordance with 42 U.S.C. § 9607(a). The applicable rate of interest is the rate in effect at the  
9 time the interest accrues. The rate of interest is subject to change on October 1 of each year.  
10 Interest on late payments shall accrue beginning on the date of lodging of the Decree through the  
11 date on which the payment is made.  
12  
13

### 14 **XIII. DISPUTE RESOLUTION**

15 36. Unless otherwise expressly provided for in this Decree, the dispute resolution  
16 procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or  
17 with respect to this Consent Decree.  
18

19 37. Any dispute which arises under or with respect to this Decree shall in the first  
20 instance be the subject of informal negotiations between the Trustees and Defendants. The  
21 period for informal negotiations shall not exceed twenty-one (21) days from the time the dispute  
22 arises, unless the parties to the dispute agree otherwise in writing. The dispute shall be  
23 considered to have arisen when the Trustees send Defendants a written notice specifying the  
24 nature of the dispute and requested relief (“Notice of Dispute”) or Defendants send the Trustees  
25 a written Notice of Dispute.  
26  
27

1           38.    a.       If the Parties cannot resolve a dispute by informal negotiations under the  
2 preceding Paragraph, then the position advanced by the Trustees shall be considered binding  
3 unless, within twenty-one (21) days after the conclusion of the informal negotiation period (i.e.,  
4 forty-two (42) days after the date of the Notice of Dispute) Defendants invoke the formal dispute  
5 resolution procedures of this Section by serving on the Trustees a written Statement of Position  
6 on the matter in dispute, including, but not necessarily limited to, any factual data, analysis or  
7 opinion supporting that position and any supporting documentation relied upon by Defendants.  
8

9                   b.       Within twenty-one (21) days after receipt of Defendants' Statement of  
10 Position, the Trustees shall serve on Defendants their written Statement of Position, including,  
11 but not necessarily limited to, any factual data, analysis or opinion supporting that position and  
12 all supporting documentation relied upon by the Trustees. Within twenty-one (21) days after  
13 receipt of the Trustees' Statement of Position, Defendants may submit a Reply. If Defendants  
14 submit a Reply, within twenty-one (21) days of receipt of the Reply, the Trustees shall issue a  
15 Revised Statement of Position or provide written notice to the Defendants that the Trustees'  
16 Statement of Position is final.  
17

18                   c.       An administrative record of the dispute shall be maintained by the  
19 Trustees and shall contain all Statements of Position, including supporting documentation,  
20 submitted pursuant to this Section.  
21

22                   d.       The Trustees' Statement of Position or Revised Statement of Position  
23 shall be binding upon Defendants unless, within twenty-one (21) days after receipt of the  
24 Trustees' Statement of Position or Revised Statement of Position (or Notice that the Statement  
25 of Position is final), whichever is later, Defendants file with the Court and serve on the Parties in  
26 accordance with Section XXII (Notices and Submissions) a motion for judicial review of the  
27

1 decision setting forth the matter in dispute, the efforts made by the Parties to resolve it, the relief  
2 requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly  
3 implementation of the Decree. The motion shall also include any supporting factual data,  
4 analysis, opinion, or documentation. The Trustees may file a response to Defendants' motion,  
5 and Defendants may file a reply, in accordance with the schedule set forth in the Local Rules for  
6 the Western District of Washington. The foregoing sentence notwithstanding, the Parties  
7 acknowledge that disputes may arise that require judicial resolution on an expedited basis. In  
8 such cases, the Parties shall agree on an expedited schedule or, absent prompt agreement, any  
9 Party to the dispute may petition the Court for the imposition of an expedited schedule.  
10

11 e. The Court may rule based on the administrative record (including the  
12 Trustees' and Defendants' Statements of Position and Replies), with or without oral argument,  
13 and shall review the Trustees' Statements of Position or its resolution of the dispute under the  
14 standards of the Administrative Procedures Act.  
15

16 f. Except as expressly stated elsewhere in this Decree, any matter in dispute  
17 shall be reviewable by this Court.  
18

19 39. The invocation of formal Dispute Resolution procedures under this Section shall  
20 not extend, postpone, or affect in any way any obligation of Defendants under this Decree, not  
21 directly in dispute, unless the Trustees or the Court agree otherwise. Stipulated Penalties with  
22 respect to the disputed matter shall continue to accrue, but payment otherwise required under  
23 Section XIV shall be stayed pending resolution of the dispute. Notwithstanding the stay of  
24 payment, Stipulated Penalties shall continue to accrue from the first day of noncompliance with  
25 any applicable provision of this Decree. In the event that the Defendants do not prevail on the  
26 disputed issue, Stipulated Penalties shall be assessed and paid as provided in Section XIV.  
27

**XIV. STIPULATED PENALTIES**

1  
2       40.    Late Payments by Defendants. Defendants shall pay a stipulated penalty of \$5,000  
3 per day that each payment pursuant to Section X (Reimbursement of Restoration Implementation  
4 Costs) or Section XI (Reimbursement of Past Assessment Costs) is not made by the required due  
5 date.

6  
7       41.    Failure to Meet Deadlines or Satisfy Requirements of the Decree. The Parties  
8 stipulate that the time period for implementing the Projects is a significant factor in the settlement  
9 reached in this Decree and that delay in carrying out the activities required in this Decree may  
10 diminish the compensatory value attributable to those activities. Consequently, in the event that  
11 Defendants fail to meet a deadline or satisfy other requirements in this Decree (subject to any  
12 modifications agreed to under Section XXIII), including those set forth in Appendix A, and any  
13 delay is not excused through operation of the provisions of Section IX (Force Majeure), then  
14 Defendants shall pay stipulated penalties as follows:  
15

- 16           a. For each week that Defendants fail to comply with any requirement in the  
17 Decree (other than payments due pursuant to Sections X and XI, addressed in  
18 Paragraph 40 above), Defendants shall pay a stipulated penalty in the  
19 amount of \$1,500 per week;  
20  
21           b. Where the delay or noncompliance extends beyond two weeks, the  
22 stipulated penalty of \$1,500 shall apply per day to each additional day of delay or  
23 noncompliance for each such missed requirement.  
24

25 For purposes of this Subparagraph, a week shall equal a continuous period of seven (7) days.

26 Nothing in this Decree prevents the simultaneous accrual of separate penalties for separate  
27 violations of this Decree. Stipulated penalties under this Paragraph are in addition to the

1 remedies available under Paragraph 10(b) and Paragraph 25 (Access to Escrow Account or  
2 Financial Assurance (if required by Paragraph 21)).

3 42. All penalties shall begin to accrue on the day after the complete performance or  
4 payment is due or the day a violation occurs, and shall continue to accrue through the final day  
5 of the payment, correction of the noncompliance or completion of the activity. Following the  
6 Trustees' determination that Defendants have failed to comply with a requirement of this Decree,  
7 the Trustees shall give Defendants written notification of the same and describe the  
8 noncompliance. The Trustees shall send Defendants a written demand for the payment of the  
9 penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of  
10 whether the Trustees have notified Defendants of the violation.  
11  
12

13 43. Payments under this Section shall be made as follows: 40% of the total to the United  
14 States; 20% of the total to the State; 20% of the total to the Suquamish Tribe; and 20% of the total  
15 to the Muckleshoot Indian Tribe. All payments for stipulated penalties to the United States will  
16 be deposited by EFT to the United States Treasury in accordance with Paragraph 32.a.(1).  
17 Payments for stipulated penalties to the State or the Tribes shall be paid in accordance with the  
18 procedures set forth in Paragraph 32. At the time of each payment, Defendants will send notice  
19 that payment has been made to the Trustees and DOJ in accordance with Section XVI (Notices  
20 and Submissions). This notice will reference Lower Duwamish River NRDA, DOJ Case Number  
21 90-11-3-07227/4, and the civil action number.  
22

23  
24 44. All penalties accruing under this Section shall be due and payable within thirty  
25 (30) days of Defendants' receipt from the Trustees of a demand for payment of the penalties,  
26 unless Defendants invoke the Dispute Resolution procedures under Section XIII (Dispute  
27 Resolution).

1           45. Defendants may dispute the Trustees' right to the penalties identified under  
2 Paragraph 41 above by invoking the procedures of Section X (Dispute Resolution). Penalties  
3 identified for late payments under Paragraph 40 above are not subject to Section XIII (Dispute  
4 Resolution).

5           46. If Defendants fail to pay stipulated penalties when due, Plaintiffs may institute  
6 proceedings in this Court to collect the penalties, as well as interest. Defendants shall pay  
7 Interest on the unpaid balance, which shall begin to accrue on the day after payment or complete  
8 performance is due.

9           47. If Plaintiffs bring a motion to enforce this Decree and prevail, Plaintiffs shall be  
10 entitled to recover from Defendants their reasonable costs of such motion or action, including,  
11 but not limited to, costs of attorney time.

12           48. Penalties shall continue to accrue as provided in Paragraph 42 during any dispute  
13 resolution period, but need not be paid until the following:

14           a. If the dispute is resolved by agreement or by a decision of the Trustees that is not  
15 appealed to this Court, accrued penalties determined to be owing shall be paid to the Trustees  
16 within fifteen (15) days of the agreement or the receipt of the Trustees' decision or order;

17           b. If the dispute is appealed to this Court and the Trustees prevail in whole or in part,  
18 Defendants shall pay all accrued penalties determined by the Court to be owed to the Trustees  
19 within sixty (60) days of receipt of the Court's decision or order, except as provided in  
20 Subparagraph (c) below;

21           c. If the District Court's decision is appealed by any Party, Defendants shall pay all  
22 accrued penalties determined by the District Court to be owing to the Trustees into an interest-  
23 bearing escrow account within sixty (60) days of receipt of the Court's decision or order.



1 Penalties shall be paid into this account as they continue to accrue, at least every sixty (60) days.

2 Within fifteen (15) days of receipt of the final appellate court decision, the escrow agent shall  
3 pay the balance of the account to the Trustees or to Defendants to the extent that they prevail.

4 49. Payments made under this Section are in addition to any other remedies or  
5 sanctions available to Plaintiffs by virtue of Defendants' failure to comply with the requirements  
6 of this Decree.  
7

8 50. Notwithstanding any other provision of this Section, Plaintiffs may, in their  
9 unreviewable discretion, waive payment of any portion of the stipulated penalties that have  
10 accrued pursuant to this Decree. The payment of penalties shall not alter in any way Defendants'  
11 other obligations under this Decree.  
12

### 13 **XV. FORCE MAJEURE**

14 51. "Force majeure," for purposes of this Consent Decree, is defined as any event  
15 arising from causes beyond the control of Defendants (including Defendants' contractors and  
16 sub-contractors, and any other entity controlled by Defendants) that delays or prevents the  
17 performance of any obligation under this Decree despite Defendants' best efforts to fulfill the  
18 obligation. The requirement that Defendants exercise "best efforts to fulfill the obligation"  
19 includes using best efforts to anticipate any potential force majeure event and using best efforts  
20 to address the effects of any potential force majeure event (1) as it is occurring and (2) following  
21 the potential force majeure event, such that the delay is minimized to the greatest extent possible.  
22 The requirement that Defendants exercise "best efforts to fulfill the obligation" also includes,  
23 where necessary, the filing of legal actions to compel contract performance in accordance with  
24 the design and schedule approved by the Trustees herein." Force majeure" does not include  
25  
26  
27

1 financial inability to fulfill any obligation under this Decree or the failure to achieve Success  
2 Criteria for the Projects.

3 a. If any event occurs or has occurred that may delay the performance of any  
4 obligation under this Decree, whether or not caused by a force majeure event, Defendants shall  
5 notify the Trustees within fourteen (14) days of when Defendants first knew that the event might  
6 cause a delay. Within thirty (30) days after notifying the Trustees, Defendants shall provide a  
7 written explanation and description of the reasons for the delay; the anticipated duration of the  
8 delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for  
9 implementation of any measures to be taken to prevent or mitigate the delay or the effect of the  
10 delay; and the rationale for attributing such delay to a force majeure event (if Defendants intend  
11 to assert such a claim). Defendants shall be deemed to know of any circumstance of which  
12 Defendants, any entity controlled by Defendants, or Defendants' contractors or subcontractors  
13 knew or should have known. Defendants shall include with any notice all available  
14 documentation supporting its claim that the delay was attributable to a force majeure event.  
15 Failure to comply with the above requirements will preclude Defendants from asserting any  
16 claim of force majeure for that event, provided, however, that if the Trustees, despite the late or  
17 incomplete notice, are able to assess to their satisfaction whether the event is a force majeure  
18 event under this Paragraph, and whether Defendants exercised best efforts under this Paragraph,  
19 the Trustees may, in their unreviewable discretion, excuse in writing Defendants' failure to  
20 submit timely or complete notices under this Paragraph.

21 b. If the Trustees agree that the delay or anticipated delay is attributable to a  
22 force majeure event, the time for performance of the obligations under this Decree that are  
23 affected by the force majeure event will be extended by the Trustees for such time as is

1 necessary. An extension of the time for performance of the obligations affected by the force  
2 majeure event shall not, of itself, extend the time for performance of any other obligation. If the  
3 Trustees do not agree that the delay or anticipated delay has been or will be caused by a force  
4 majeure event, the Trustees will notify Defendants in writing of their decision.

5 c. If Defendants elect to invoke the Dispute Resolution procedures set forth  
6 in Section XIII, above, regarding a claimed force majeure event it shall do so no later than fifteen  
7 (15) days after receipt of the Trustees' notice of disagreement. In any such proceeding  
8 Defendants shall have the burden of demonstrating by a preponderance of the evidence that the  
9 delay or anticipated delay has been or will likely be caused by a force majeure event, that the  
10 duration of the delay or the extension sought was or will be warranted under the circumstances,  
11 that Defendants exercised best efforts to fulfill the obligation in question, that best efforts were  
12 exercised to avoid and mitigate the effects of the delay, and that Defendants complied with the  
13 requirements of this Paragraph. If Defendants carry this burden, the delay at issue shall be  
14 deemed not to be a violation by Defendants of the affected obligation of this Decree.  
15  
16

17  
18 **XVI. INDEMNIFICATION; INSURANCE**

19 52. a. Plaintiffs do not assume any liability by entering into this Decree.  
20 Defendants shall indemnify and hold harmless each of the Plaintiffs and/or their agents,  
21 employees and representatives from any and all damage claims or causes of action arising from  
22 negligent or other wrongful acts or omissions of Defendants and/or its officers, employees,  
23 agents, contractors, subcontractors, representatives and any persons acting on its behalf or under  
24 its control in carrying out activities pursuant to this Decree. Further, Defendants agree to pay  
25 Plaintiffs all costs Plaintiffs incur, including but not limited to attorneys' fees and other expenses  
26 of litigation and settlement, arising from or on account of claims made against Plaintiffs based on  
27

1 negligent or other wrongful acts or omissions of Defendants or their officers, employees, agents,  
2 contractors, subcontractors, representatives and any persons acting on its behalf or under its  
3 control, in carrying out activities pursuant to this Decree. None of the Plaintiffs shall be held out  
4 as a party to any contract entered into by or on behalf of Defendants in carrying out activities  
5 pursuant to this Decree. Neither Defendants nor any contractor or representative of Defendants  
6 shall be considered an agent of any Plaintiff, and Defendants shall require any contractor  
7 hereafter retained by Defendants who performs work for Defendants in carrying out activities  
8 pursuant to this Consent Decree to affirmatively acknowledge that it is not acting as an agent of  
9 any Plaintiff.  
10

11           b. Plaintiffs shall give Defendants written notice of any claim for which one  
12 or more Plaintiffs plan to seek indemnification pursuant to Paragraph 52(a), and shall consult  
13 with Defendants (including, but not limited to, responding to Defendants' reasonable requests for  
14 information regarding any proposed settlement of that claim) prior to settling such claim.  
15

16           53. Defendants waive all claims against Plaintiffs for damages or reimbursement or  
17 for set-off of any payments made or to be made to Plaintiffs, arising from or on account of any  
18 contract, agreement, or arrangement between Defendants and any person for performance of  
19 activities pursuant to this Decree, including, but not limited to, claims on account of construction  
20 delays. In addition, Defendants shall indemnify and hold harmless Plaintiffs with respect to any  
21 and all claims for damages or reimbursement arising from or on account of any contract,  
22 agreement, or arrangement between any Defendant and any person for performance of activities  
23 pursuant to this Decree, including, but not limited to, claims on account of construction delays.  
24

25           54. No later than fifteen (15) days before commencing any work on the Project Site,  
26 Defendants shall cause to be maintained comprehensive general liability insurance and  
27

1 automobile liability insurance with limits of \$10,000,000 (ten million dollars), combined single  
2 limit. The Trustees shall be named additional insureds on any such policies with respect to all  
3 liability arising out of the activities performed by or on behalf of Defendants pursuant to this  
4 Decree. In addition, for the duration of this Decree Defendants shall satisfy, or shall ensure that  
5 their contractors or subcontractors satisfy, all applicable laws and regulations regarding the  
6 provision of worker's compensation insurance for all persons performing any work involved in  
7 implementing this Decree. No later than fifteen (15) days before commencing any work  
8 involved in implementing this Decree, Defendants shall provide to the Trustees certificates of  
9 such insurance and copies of such insurance policies. Defendants shall resubmit such certificates  
10 and copies of policies each year on the anniversary of the Effective Date of this Consent Decree.  
11 If Defendants demonstrate by evidence satisfactory to the Trustees that any contractor or  
12 subcontractor maintains insurance equivalent to that described above, or insurance covering the  
13 same risks but in a lesser amount, then, with respect to that contractor or subcontractor,  
14 Defendants need provide only that portion of the insurance described above that is not  
15 maintained by the contractor or subcontractor.

16  
17  
18  
19 **XVII. COVENANT NOT TO SUE BY PLAINTIFFS**

20 55. Except as specifically provided in Section XX (Reservations of Rights) below,  
21 Plaintiffs covenant not to sue or to take administrative action against Defendants pursuant to  
22 Section 107(a) of CERCLA, 42 U.S.C. § 9607(a); Chapter 70.105D RCW; Section 311 of the  
23 Clean Water Act (CWA), 33 U.S.C. § 1321; Section 1002(a) of the Oil Pollution Act of 1990  
24 (OPA), 33 U.S.C. § 2702(a); or any applicable tribal law, to recover Covered Natural Resource  
25 Damages. This covenant not to sue will take effect upon Defendants' payment of costs pursuant  
26 to Section XI (Reimbursement of Past Assessment Costs), and is conditioned upon the  
27

1 satisfactory performance by Defendants of their obligations under this Consent Decree. This  
2 covenant not to sue extends only to Defendants and does not extend to any other person except to  
3 successors and assigns of Exxon Mobil and Vigor, but only to the extent that liability is based  
4 solely on such person's status as the successor or assign of Exxon Mobil or Vigor.

5  
6 **XVIII. RESERVATIONS OF RIGHTS**

7 56. Plaintiffs reserve, and this Decree is without prejudice to, all rights against  
8 Defendants with respect to all matters not expressly included within the Covenant Not to Sue by  
9 Plaintiffs in Section XVII. Notwithstanding any other provision of this Consent Decree,  
10 Plaintiffs reserve all rights against Defendants with respect to:

11 a. liability for any other costs, including without limitation, costs of response  
12 incurred or to be incurred by the United States, the State, or the Tribes under any federal or State  
13 statute or tribal law that are not within the definition of Covered Natural Resource Damages;

14 b. liability for damages to Natural Resources (including assessment costs) as  
15 defined in 42 U.S.C. §§ 9601(6 & 16) that are not within the definition of Covered Natural  
16 Resource Damages;

17 c. liability for damages to Natural Resources (including assessment costs) as  
18 defined in 42 U.S.C. §§ 9601(6 & 16) within the Lower Duwamish River and/or Elliott Bay  
19 resulting from new releases of hazardous substances or discharges of oil from Defendant's  
20 property and/or operations after the Effective Date of this Decree;

21 d. liability for damages to Natural Resources (including assessment costs) as  
22 defined in 42 U.S.C. §§ 9601(6 & 16) based upon Defendant's transportation, treatment, storage,  
23 or disposal, or the arrangement for the transportation, treatment, storage, or disposal of hazardous  
24

1 substances at or in connection with the Lower Duwamish River, after the Effective Date of this  
2 Decree;

3 e. liability for injunctive relief or administrative order enforcement under any  
4 federal or State statute;

5 f. liability under Section 107(a)(4)(D), 42 U.S.C. § 9607(a)(4)(D), for costs  
6 of any health assessment or health effects study carried out under 42 U.S.C. § 9604(i);  
7

8 g. additional claims for Covered Natural Resource Damages if conditions,  
9 factors or information in the Lower Duwamish River and/or Elliott Bay, not known to the  
10 Trustees as of the Effective Date, are discovered that, together with any other relevant  
11 information, indicate that there is a threat to the environment, or injury to, destruction of, or loss  
12 of Natural Resources of a type unknown, or of a magnitude significantly greater than was  
13 known, as of the Effective Date of this Decree (for purposes of this Subparagraph, information  
14 known to the Trustees shall consist of any information in the files of, or otherwise in the  
15 possession of, any one of the individual Trustees, or their contractors or consultants who worked  
16 on the Trustees' natural resource damages assessment and liability allocation projects);  
17

18 h. criminal liability to the United States or State; and

19 i. liability for failure of Defendants to satisfy the requirements of this Decree.  
20

21 **XIX. COVENANT NOT TO SUE AND RESERVATION OF RIGHTS BY**  
22 **DEFENDANTS**  
23

24 57. Defendants covenant not to sue and agree not to assert any claims or causes of  
25 action against the United States, the State, the Suquamish Tribe, and the Muckleshoot Indian Tribe,  
26 or their contractors or employees, relating to Covered Natural Resource Damages, including, but  
27 not limited to:

1 a. any direct or indirect claim for reimbursement of any payment for Covered Natural  
2 Resource Damages from the Hazardous Substance Superfund based on CERCLA Sections 107,  
3 111, 112, 113, or any other provision of law;

4 b. any claim against the United States, the State, or the Tribes pursuant to Sections  
5 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to Covered Natural Resource  
6 Damages; or  
7

8 c. any claims arising out of activities related to the Restoration Projects,  
9 including, without limitation, claims based on the Trustees' approval of the Projects, oversight and  
10 monitoring of the Restoration Projects, and/or approval of plans for such activities.  
11

12 58. Vigor and Exxon Mobil each reserve, and this Decree is without prejudice to, all  
13 rights, including defenses and counterclaims, with respect to all matters reserved in Section XVIII  
14 (Reservation of Rights).

15 **XX. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION**

16 59. Nothing in this Decree shall be construed to create any rights in, or grant any  
17 cause of action to, any person not a Party to this Decree. Each of the Parties expressly reserves  
18 any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C.  
19 § 9613), defenses, claims, demands, and causes of action each Party may have with respect to  
20 any matter, transaction, or occurrence relating in any way to the Lower Duwamish River against  
21 any person not a Party hereto. Nothing in this Decree diminishes the right of the United States,  
22 pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any  
23 such persons to obtain additional relief (including response action, response costs, and natural  
24 resource damages) and to enter into settlements that give rise to contribution protection pursuant  
25 to Section 113(f)(2).  
26  
27



1           60.     The Parties agree, and by entering this Decree this Court finds, that this  
2 settlement constitutes a judicially-approved settlement for purposes of Section 113(f)(2), and that  
3 Defendants are entitled, as of the Effective Date of this Decree, to protection from contribution  
4 actions or claims as provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2), and RCW  
5 70.105D.040(4)(d), or as may be otherwise provided by law, for Covered Natural Resource  
6 Damages; provided, however, that if Plaintiffs exercise their rights under the reservations in  
7 Section XVIII, other than in Paragraphs 56(h) (criminal liability) and 56(i) (failure to satisfy a  
8 requirement of this Decree), the contribution protection afforded by this Decree will no longer  
9 include those matters that are within the scope of the exercised reservation.  
10

11           61.     Defendants agree that they will each notify the Trustees and the United States in  
12 writing no later than sixty (60) days before bringing a suit or claim for contribution for Covered  
13 Natural Resource Damages. Defendants also will each notify the Trustees of any settlement of  
14 its claims (regardless of whether the claim is filed or unfiled) for contribution for Covered  
15 Natural Resource Damages. Defendants also agree that they will each notify the Trustees and  
16 the United States in writing within ten (10) days of service of a complaint or claim upon a  
17 Defendant relating to a suit or claim for contribution for Covered Natural Resource Damages. In  
18 addition, Defendants will each notify the Trustees and the United States within ten (10) days of  
19 service or receipt of any Motion for Summary Judgment and within ten (10) days of receipt of  
20 any order from a court setting a case for trial for matters related to this Decree.  
21

22           62.     In any subsequent administrative or judicial proceeding initiated by Plaintiffs for  
23 injunctive relief, recovery of response costs, or other appropriate relief other than Covered  
24 Natural Resource Damages, Defendants shall not assert, nor may they maintain, any defense or  
25 claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion,  
26

1 claim-splitting, or other defenses based upon any contention that the claims raised by Plaintiffs  
2 in the subsequent proceeding were or should have been brought in the instant case; provided,  
3 however, that nothing in this Paragraph affects the enforceability of the Covenants Not to Sue set  
4 forth in Sections XVII and XIX.

### 5 **XXI. RETENTION OF RECORDS**

6  
7 63. Until ten (10) years after Defendants' receipt of the Trustees' notification  
8 pursuant to Paragraph 12 (Notice of Approval of Completion of Initial Maintenance and  
9 Monitoring Obligations), Defendants shall preserve and retain all non-identical copies of records  
10 and documents (including records or documents in electronic form) now in their possession or  
11 control or which come into their possession or control that relate in any manner to their liability  
12 or the liability of any other person under CERCLA with respect to the Lower Duwamish River.  
13 Defendants must also retain, and instruct their respective contractors and agents to preserve, for  
14 the same period of time specified above all non-identical copies of the last draft or final version  
15 of any documents or records (including documents or records in electronic form) now in their  
16 possession or control or which come into their possession or control that relate in any manner to  
17 the performance of the Projects, provided, however, that Defendants (and their contractors and  
18 agents) must respectively retain, in addition, copies of all data generated during the performance  
19 of the Work and not contained in the aforementioned documents required to be retained. Each of  
20 the above record retention requirements shall apply respectively and individually to Defendants,  
21 regardless of any corporate retention policy to the contrary.  
22  
23  
24

25 64. At the conclusion of this document retention period, Defendants shall each  
26 respectively notify the Trustees at least ninety (90) days prior to the destruction of any such  
27 records or documents, and except as provided in Paragraph 65 (Privileged and Protected Claims),  
28



1 the other Parties in writing. Written notice by regular mail as specified constitutes complete  
2 satisfaction of any written notice requirement of the Decree for Plaintiffs and Defendants.

3 As to the United States and as to DOJ:

4 EES Case Management Unit  
5 Environment and Natural Resources Division  
6 U.S. Department of Justice  
7 P.O. Box 7611  
8 Washington, D.C. 20044-7611  
(DJ #90-11-3-07227/4)

9 Erika Wells  
10 U.S. Department of Justice  
11 c/o NOAA/Damage Assessment  
7600 Sand Point Way, NE  
Seattle, WA 98115

12 As to NOAA:

13 Laurie Lee  
14 NOAA Office of General Counsel  
15 501 W. Ocean Blvd., Suite 4470  
Long Beach, CA 90802

16 Marla Steinhoff  
17 Regional Resource Coordinator  
18 Office of Response and Restoration  
19 Assessment and Restoration Division  
20 7600 Sand Point Way NE, Bldg. 1,  
Seattle, WA 98115-6349

21 As to the United States Department of the Interior:

22 Deirdre Donahue  
23 U.S. Department of the Interior  
24 Office of the Solicitor  
601 SW 2nd Avenue, Suite 1950  
Portland, OR 97204

25 Jeff Krausmann  
26 U.S. Fish & Wildlife Service  
27 510 Desmond Dr. SE, Suite 102  
Lacey, WA 98503-1263

28 CONSENT DECREE – Page 52

U. S. DEPARTMENT OF JUSTICE  
Environment and Natural Resources Division  
7600 Sand Point Way NE  
Seattle, WA 98115

1 As to the State:

2 Donna Podger  
3 Toxics Cleanup Program  
4 State of Washington  
5 P.O. Box 47600  
6 Olympia, WA 98504-7600

7 As to the Suquamish Tribe:

8 Melody Allen  
9 Suquamish Tribe  
10 Office of Tribal Attorney  
11 P.O. Box 498  
12 Suquamish, WA 98392-0498

13 As to the Muckleshoot Indian Tribe:

14 Rob Otsea and Trent Crable  
15 Office of the Tribal Attorney  
16 Muckleshoot Indian Tribe  
17 39015 172nd Avenue S.E.  
18 Auburn, WA 98002

19 As to Defendant Vigor:

20 Alan Sprott  
21 Vice President  
22 Vigor Industrial LLC  
23 5555 N. Channel Avenue  
24 Portland, OR 97217

25 Charles R. Blumenfeld  
26 Perkins Coie LLC  
27 1201 Third Avenue, Suite 4900  
28 Seattle, WA 98101

As to Defendant Exxon Mobil:

U.S. Claims & Superfund Manager  
Exxon Mobil Environmental Services Company  
22777 Springwoods Village Pkwy (S2 2B 282)  
Spring, TX 77389

1 Kevin Vaughn  
2 Counsel, Environmental & Safety  
3 22777 Springwoods Village Pkwy (E2 3B 508)  
4 Spring, TX 77389

5 **XXIII. EFFECTIVE DATE**

6 68. The effective date of this Consent Decree shall be the date upon which the  
7 approval of this Decree is recorded on the Court's docket.

8  
9 **XXIV. RETENTION OF JURISDICTION**

10 69. This Court retains jurisdiction over both the subject matter of this Decree and the  
11 Parties for the duration of the performance of the terms and provisions of this Decree for the  
12 purpose of enabling any of the Parties to apply to the Court at any time for such further order,  
13 direction, and relief as may be necessary or appropriate for the construction or modification of  
14 this Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in  
15 accordance with Section XIV (Dispute Resolution) hereof.  
16

17 **XXV. INTEGRATION/APPENDICES**

18  
19 70. This Decree and its appendices constitute the final, complete, and exclusive  
20 agreement and understanding with respect to the settlement embodied in this Decree. The  
21 Parties acknowledge that there are no representations, agreements, or understandings relating to  
22 the settlement other than those expressly contained in this Decree. The terms "Consent Decree"  
23 and "Decree" as used herein include the appendices to this Decree, unless expressly indicated to  
24 the contrary. The following appendices are attached to and incorporated into this Decree:  
25

26 Appendix A Vigor Shipyards Habitat Projects Scope of Work  
27

1 Appendix B Legal Description(s) and Map of the property included within the definition of  
2 Covered Natural Resource Damages

3 Appendix C Environmental Covenant (Defendant Vigor's property)

4 Appendix D Performance Guarantee for Monitoring, Maintenance and Long-term Stewardship  
5 of the Projects

## 6 **XXVI. MODIFICATION**

7 71. No material modifications shall be made to any requirement under this Decree  
8 without written notification to and written approval of the United States Department of Justice  
9 and the Trustees, Defendants, and the Court. Modifications to this Consent Decree exclusive of  
10 the appendices incorporated within that do not materially alter the terms of this Decree may be  
11 made by written agreement between the United States Department of Justice, the Trustees, and  
12 Defendants. Modifications to any of the appendices to this Decree that do not materially alter any  
13 of the terms of this Decree may be made by written agreement between the Trustees and  
14 Defendants.  
15

## 16 **XXVII. ENFORCEMENT**

17 72. The requirements of this Decree, including but not limited to deadlines, schedules  
18 and Project designs, are independently enforceable. Any delay or failure of the Trustees to  
19 enforce any requirement will not preclude or prejudice the subsequent enforcement of the same  
20 or another requirement.  
21

## 22 **XXVIII. 26 U.S.C. SECTION 162(f)(2)(A)(ii) IDENTIFICATION**

23 73. For purposes of the identification requirement of Section 162(f)(2)(A)(ii) of the  
24 Internal Revenue Code, 26 U.S.C. §162(f)(2)(A)(ii), performance of Paragraph 3; Paragraph 5;  
25 Section VII (Restoration Projects), Paragraphs 9-16, 18, and 20-24 and related Appendix A;  
26 Section VIII (Access To Information And Project Sites), Paragraphs 27-29; Section  
27

28 CONSENT DECREE – Page 55

U. S. DEPARTMENT OF JUSTICE  
Environment and Natural Resources Division  
7600 Sand Point Way NE  
Seattle, WA 98115

1 IX (Selection Of Contractors), Paragraph 30; Section X (Reimbursement Of Restoration  
2 Implementation Costs), Paragraph 31; Section XI (Past Assessment Cost Reimbursement),  
3 Paragraphs 32-34; Section XVI (Indemnification; Insurance), Paragraphs 52-54; and Section  
4 XXI (Retention Of Records), Paragraphs 63, 64, and 66, is restitution or required to come into  
5 compliance with law.  
6

7 **XXIX. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT**

8 74. This Decree will be lodged with the Court for a period of not less than thirty (30)  
9 days for public notice and comment. Plaintiffs each reserve the right to withdraw or withhold  
10 their consent if the comments regarding the Decree disclose facts or considerations that indicate  
11 this Decree is inappropriate, improper, or inadequate. Defendants consent to the entry of this  
12 Decree without further notice.  
13

14 75. If for any reason this Court does not approve this Decree in the form presented,  
15 this Decree may be voided at the sole discretion of any Party, and the terms of the agreement  
16 may not be used as evidence in any litigation among the Parties.  
17

18 **XXX. SIGNATORIES/SERVICE**

19 76. The Assistant Attorney General for the Environment and Natural Resources  
20 Division of the United States Department of Justice and each undersigned representative of the  
21 State, the Suquamish Tribe, the Muckleshoot Indian Tribe, and Defendants certifies that he or  
22 she is authorized to enter into the terms and conditions of this Decree and to execute and bind  
23 legally the Party that he or she represents to this document.  
24

25 77. Defendants agree not to oppose entry of this Decree by this Court or to challenge  
26 any provision of this Decree unless any Plaintiff has notified Defendants in writing that it no  
27 longer supports entry of the Decree.  
28



1 78. Defendants will identify on the attached signature page the name and address of  
2 an agent who is authorized to accept service of process by mail on behalf of each of them with  
3 respect to all matters relating to this Decree. Defendants agree to accept service in that manner  
4 and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil  
5 Procedure and any applicable local rules of this Court, including but not limited to service of a  
6 summons. Defendants need not file an answer to the complaint in this action unless or until the  
7 Court expressly declines to enter this Decree.  
8

9 **XXXI. FINAL JUDGMENT**

10 79. Upon approval and entry of this Decree by the Court, this Decree shall constitute a  
11 final judgment between and among the United States, the State, the Suquamish Tribe, the  
12 Muckleshoot Indian Tribe, and Defendants. The Court finds that there is no just reason for delay  
13 and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.  
14

15  
16 SO ORDERED this 26th day of May, 2021.  
17  
18  
19

20 

21 RICARDO S. MARTINEZ  
22 CHIEF UNITED STATES DISTRICT JUDGE  
23  
24  
25  
26  
27


1 Signature Page for Decree regarding the Lower Duwamish River

2 *U.S., et al., v. Vigor Industrial, LLC & Exxon Mobil Corp.*

3  
4 FOR THE UNITED STATES OF AMERICA:

5  
6  
7 JONATHAN D. BRIGHTBILL  
Principal Deputy Assistant Attorney  
8 General  
Environment & Natural Resources  
9 Division U.S. Department of Justice  
10 Washington, D.C. 20530

11  
12 Date: 1/7/2021

13   
14 \_\_\_\_\_  
ERIKA M. WELLS  
15 Senior Counsel  
16 Environmental Enforcement Section  
17 Environment & Natural Resources  
18 Division U.S. Department of Justice  
19 c/o NOAA Damage Assessment  
20 7600 Sand Point Way, NE Seattle,  
21 Washington 98115  
22  
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25  
26  
27

1 Signature Page for Decree regarding the Lower Duwamish River

2 *U.S., et al., v. Vigor Industrial, LLC & Exxon Mobil Corp.*

3  
4 FOR DEFENDANT VIGOR INDUSTRIAL LLC:

5  
6 Date:

10/17/2020




7 T. ALAN SPROTT  
8 Vice President, Environmental Services  
9 Vigor Industrial LLC

1 Signature Page for Decree regarding the Lower Duwamish River

2 *U.S., et al., v. Vigor Industrial, LLC & Exxon Mobil Corp.*

3 FOR DEFENDANT EXXON MOBIL CORP.:

4  
5  
6  
7 Date: 10/20/2020

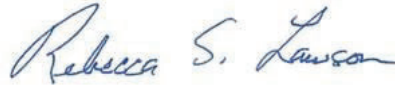
  
8 Maria M. Quezada  
9 Agent and Attorney in Fact

1 Signature Page for Decree regarding the Lower Duwamish River

2 *U.S., et al., v. Vigor Industrial, LLC & Exxon Mobil Corp.*

3  
4 FOR THE STATE OF WASHINGTON:

5  
6 Date: 11/23/2020



REBECCA LAWSON  
Toxic Cleanup Program Manager  
Department of Ecology

7  
8  
9  
10  
11 Date: 11/24/2020




JONATHAN THOMPSON  
Assistant Attorney General  
State of Washington

1 Signature Page for Decree regarding the Lower Duwamish River

2 *U.S., et al., v. Vigor Industrial, LLC & Exxon Mobil Corp.*

3 FOR THE SUQUAMISH TRIBE:  
4

5 Date: 08/27/2020  
6 \_\_\_\_\_

DocuSigned by:  
  
F19A5D9A5D7A4A4...

7 LEONARD FORSMAN  
8 Chairman  
9 Suquamish Tribe  
10 Post Office Box 498  
11 Suquamish, Washington 98392


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1 Signature Page for Decree regarding the Lower Duwamish River

2 *U.S., et al., v. Vigor Industrial, LLC & Exxon Mobil Corp.*

3 FOR THE MUCKLESHOOT INDIAN TRIBE:  
4

5 Date: 1-11-21

  
6  
7 JAISON ELKINS  
8 Chairperson  
9 Muckleshoot Indian Tribe  
10 39015 172nd Ave. S.E.  
11 Auburn, WA 98092-9763  
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## **Scope of Work**

Vigor Shipyards Habitat Projects

Seattle, Washington

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July 2020

*Final*



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## ACRONYMS AND ABBREVIATIONS

<b>Acronym/ Abbreviation</b>	<b>Definition</b>
Boeing	The Boeing Company
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
City	City of Seattle
DNR	Washington State Department of Natural Resources
MLLW	Mean Lower Low Water
NOAA	National Oceanic and Atmospheric Administration
NRD	Natural Resource Damages
OMMP	Operations, Monitoring, and Maintenance Plan
Performing Parties	Vigor Industrial, LLC and ExxonMobil Corporation
SCO	Sediment Cleanup Objective
SMS	Sediment Management Standards
SOW	Scope of work
SW Yard Project	Southwest Yard Habitat Project

FINAL

Vigor Shipyards Habitat Projects

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<b>Acronym/ Abbreviation</b>	<b>Definition</b>
Trustees	Natural Resource Trustees
TSSOU	Todd Shipyards Sediment Operable Unit
USEPA	U.S. Environmental Protection Agency
Vigor	Vigor Shipyards Corporation
WW Bench	West Waterway Habitat Bench

## **SCOPE OF WORK**

### **Vigor Shipyards Habitat Projects**

### **Seattle, Washington**

#### **1.0 INTRODUCTION**

This document is Appendix A to the Consent Decree, incorporating the settlement of Natural Resources Damages (NRD) associated with the Vigor Shipyards Corporation (Vigor) property (hereafter referred to as the Property). The Property is located adjacent to the West Waterway of the Lower Duwamish River within the Harbor Island Superfund Site (Tax Parcels 7666702805, 7666702851, 7666702852, and 7671800254). The sediment remedial action area associated with the Property is identified as the Todd Shipyards Sediment Operable Unit (TSSOU). This document describes the scope of the work required to comply with the terms of the NRD settlement. In accordance with the Consent Decree, implementation of the Scope of Work (SOW) is the joint responsibility of Vigor Industrial, LLC and ExxonMobil Corporation (the Performing Parties).

Due to the industrialization of the Lower Duwamish River, off-channel habitats used by juvenile salmonids, birds, and other estuarine species have been largely eliminated, which results in limited spring/summer off-channel rearing habitat and limited high-flow refuge. Riparian functions have also been greatly reduced by diking and stream bank development, which results in reduced shading and input of leaf litter and insects. Off-channel and riparian habitats have been identified as limited factors for Green River anadromous salmonid populations. The Vigor NRD settlement has been designed to increase the area and functions value of habitat for salmonids and other resource species.

The type of off-channel habitat to be constructed is considered to be highly desirable by both the National Oceanic and Atmospheric Administration's (NOAA's) Lower Duwamish River Restoration Plan (NOAA 2013) and the Duwamish Blueprint prepared for the Water Restriction Inventory Area 9 Watershed Ecosystem Forum (Ostergaard et al., 2014). As a whole, the West Waterway habitat serves an important function for salmonid species, acting as a migration corridor and final refuge between up-river spawning habitats and the relatively unprotected Elliott Bay estuary, and at an important location relative to equilibration from fresh to salt water.

Along this reach there is only a limited amount of existing habitat, including the intertidal bench in the TSSOU constructed as part of this NRD settlement (the West Waterway Habitat Bench [WW Bench], described below) and Lockheed Yard 1 (Port of Seattle Terminal 10) located on the southwest shore of Harbor Island. These small habitat areas are disproportionately significant as refuge places and are particularly valuable because of the overall habitat scarcity within this reach. Because of their scarcity, these habitats serve as a limiting factor on the overall health of salmonids in the Lower Duwamish River environment. These intertidal habitats constructed within the last 10 years serve as a food source for salmonids and are valuable refuge and rearing areas. However, the WW Bench and habitat associated with Lockheed Yard 1 are approximately 2,000 feet apart. The proposed off-channel habitat (hereafter referred to as the Southwest Yard Habitat Project [SW Yard Project]) will be located between the two intertidal habitat areas, thus shortening the time it will take salmonids to travel between the higher quality habitat areas. The off-channel

habitat will provide important habitat diversity, be unique within this industrialized reach, and support important ecosystem processes.

This document describes the scope of the work required to comply with the terms of the NRD settlement, which includes two habitat projects:

1. WW Bench:<sup>1</sup> the permanent removal of overwater coverage, creosote-treated piling removal, and the intertidal restoration project completed in 2006; and
2. SW Yard Project: implementation of additional removal of overwater coverage and creosote-treated piling, and construction of additional estuarine habitat, including conversion of upland dry lands to aquatic habitat.

Between the two projects, the following elements have been or will be implemented by the Performing Parties:

- Creation of approximately 0.29 acres of riparian buffer between +18 and +12 feet Mean Lower Low Water (MLLW).
- Creation of approximately 0.35 acres of off-channel habitat with marsh vegetation between +5 and +12 feet MLLW.
- Creation of approximately 3.14 acres of intertidal habitat between -2 and +5 feet MLLW.
- Removal of approximately 2.74 acres of overwater coverage.
- Conversion of approximately 1.48 acres of uplands to habitat area.
- Removal of approximately 5,770 creosote-treated pilings.
- At the time of construction, as a one-time pilot, voids within riprap armored slope above elevation -10 feet MLLW will be filled with habitat mix.<sup>2</sup> This is to be conducted over approximately 3 acres and is not intended to be replenished if erosional forces cause the habitat mix to move downslope.

Quantification of the habitat restoration elements for both the WW Bench and the proposed SW Yard Project is presented in Table 1. This table clarifies which elements have already been constructed and which actions will be undertaken as requirements under the NRD Settlement CD.

An Operations, Monitoring, and Maintenance Plan (OMMP) for the TSSOU was approved by the U.S. Environmental Protection Agency (USEPA) in 2007 (Floyd|Snider 2007) as part of the TSSOU sediment cleanup. The OMMP describes the design of the WW Bench and the long-term physical monitoring of the WW Bench that was implemented annually between 2007 and 2011 in

---

<sup>1</sup> In the Todd Shipyards Sediment Operable Unit Draft Final Design Report, April 20, 2003, the EPA cleanup requirements were described in detail. Also stated was Todd's intent to construct additional habitat improvements for the purpose of future NRDA credit (page 5-33). The Trustees accepted this documentation as a clear delineation of what was required by EPA as part of the cleanup versus what was above and beyond to avoid any double counting issues related to accepting additional habitat improvements for NRDA as part of this settlement.

<sup>2</sup> "Habitat mix" in this document refers to clean, naturally occurring round or sub-angular river sand and gravel. Requirements for habitat mix grain size distribution for different locations on the project will be determined during design in collaboration with the Trustees. Habitat mix will be selected to be the smallest grain size appropriate to the specific area wave climate that will support habitat use without jeopardy of rapidly eroding away.

accordance with the OMMP. The required physical monitoring includes visual monitoring surveys by divers of the substrate surface (habitat mix) along several transects of the WW Bench.

During the 2011 monitoring event (Year 4), video footage along with diver observations confirmed that the habitat mix remains in place and there are no areas of significant erosion of the habitat mix along these transects. The area is well colonized by marine life and algae, which will continue to assist with material stability over time. An observation of the WW Bench was performed by the Natural Resource Trustees (Trustees) in September 2015, which additionally confirmed that the bench is providing habitat for small fish, is colonized by marine algae, and is generally performing as intended. The most recent survey was the Year 9 physical integrity monitoring survey in the fall of 2016, which continued to show that the cap material was stable. As of 2016, long-term monitoring of the capped areas under the OMMP is considered complete, and no further routine monitoring is required.

Additional monitoring of the WW Bench to be conducted under this SOW is described in Section 6.0 and Table 2A.

The following issues are addressed in this SOW:

- The proposed concept for the SW Yard Project
- The process that will be used to refine the design of the SW Yard Project
- The site-specific investigations that will be undertaken as part of the design process for the SW Yard Project
- The maintenance and monitoring program that will be implemented to ensure that the objectives of the restoration are met
- The success criteria and monitoring methods and frequency that will be used for the project, both at the SW Yard Project and the WW Bench

## **2.0 SOUTHWEST YARD HABITAT PROJECT DESCRIPTION**

The proposed SW Yard Project is designed to maximize the value of habitat by: optimizing the area and quality of off-channel habitat of intertidal area and marsh vegetation; optimizing the riparian buffer; constructing a perimeter berm to protect the off-channel habitat from West Waterway wave action, while constructing multiple openings to the off-channel habitat area to encourage fish passage; and restricting uses within the open water area directly north of the constructed off-channel habitat.

### **2.1 SOUTHWEST YARD HABITAT PROJECT**

The construction elements of the proposed SW Yard Project are shown in Figures 1 through 6. For construction of the proposed SW Yard Project, the existing Pier 1, Ship Building Ways, Pier 1A, and Pier 2P will be demolished, and associated creosote-treated pilings removed. A small portion of Pier 2P will be rebuilt, as it is necessary for shipyard access.

Final sediment cleanup will be conducted below the demolished structures in accordance with Vigor's Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Consent Decree, Civil Action No. CV03-1179 with the USEPA.

The proposed new habitat area will prioritize intertidal habitat area, fringed by marsh vegetation and a vegetated riparian buffer. The off-channel habitat area will be designed to encourage fish passage from the West Waterway channel into the habitat area and will also have an opening for fish passage to the northeast. An initial conceptual design for the proposed habitat area is shown in Figures 1-6. The design will be further refined during the design process undertaken per this SOW, as defined in Section 3.0. The design process will determine the final combination of intertidal area and marsh vegetation to be constructed, as well as the final configuration of the perimeter berm, channel openings, and migration channel. Construction of the proposed habitat elevations requires placement of a significant wedge of new fill to raise and expand the area. Clean material dredged from the basin between Pier 1 and Pier 3 will be used to construct the majority of the fill. Imported riprap will form the exterior surface of the fill to stabilize the steep exterior slopes and to construct the berms that protect the off-channel habitat from wave action. A protective berm will be constructed to protect the off-channel habitat from West Waterway wave action created by vessel wakes and storm fetch. A migration corridor, a minimum of 15 feet in width, will be constructed outside of the protective berm to facilitate fish migration leading into and out of the habitat area. A debris boom will be designed for installation across the West Waterway channel opening, to protect the off-channel habitat area from damage by floating debris, while minimizing impact to fish passage.

Within the off-channel habitat area, imported clean materials<sup>3</sup> will be placed, to a minimum 4-foot thickness, to support marsh vegetation, and as beneficial habitat substrates. Habitat substrates will be selected during the design process, based on review of habitat substrates in similar estuary environments (refer to Section 3.5). Clean topsoil will be placed within a riparian buffer, to be located to the south and east of the new marsh, and in zones along the protective exterior berm. Habitat mix, with grain size for specific areas determined during design, will be placed within the intertidal habitat areas, including the migration corridor to be located offshore of the protective berm. The protected interior of the off-channel habitat area will be able to support a finer-grained habitat mix. At the time of construction, voids within riprap armored slope above elevation -10 feet MLLW will be filled with habitat mix.

Habitat substrates within the vegetated marsh areas and the proposed habitat mix gradation for intertidal areas will be selected and specified with the Trustees' input and approval. The marsh and riparian buffer areas will be planted with appropriate vegetation, to be determined with the Trustees' input. The selection of appropriate vegetation will utilize findings from the habitat parameter investigation described in Section 3.5. Large woody debris will be placed to increase habitat complexity.

The Performing Parties will work with the Trustees to design the bathymetry within the off-channel habitat area to achieve an optimal layout and elevations. Additionally, the Performing

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<sup>3</sup> Sampling and analysis will be performed to assure that all imported material and all constructed habitat surfaces are confirmed clean for all constituents per the Sediment Quality Standards (SQS), also known as the Sediment Cleanup Objectives (SCO) presented in the Sediment Management Standards (SMS; Washington Administrative Code 173-204).

Parties will work with tribal representatives to locate net anchors in the SW Yard Project area at optimal locations to facilitate tribal fisheries.

## **2.2 OPEN WATER RESTRICTED USE AREAS**

Vigor will restrict activities within the open water areas north of the new habitat area, to protect the habitat area from shading and impact, and to reduce noise and vessel movement impacts to migrating salmon, while maintaining shipyard operations associated with Pier 3.

Three zones have been defined within the open water area and are shown on Figure 3. These zones are defined as follows:

1. Zone 1, within 170 feet from the face of Pier 3: Unrestricted Shipyard Operations. Potential future drydock moorage must be within this area.
2. Zone 2, between 170 feet and 250 feet from the face of Pier 3: Shipyard Operational Area, with Restrictions. Potential future structures are restricted to dolphins; no piers. There are no restrictions on moorage. Between March 1 and June 30 of each year, non-emergency motorized vessel operations are restricted to 3 hours maximum duration per 24-hour period, to minimize noise and vessel movement impacts to migrating salmon.
3. Zone 3, more than 250 feet from the face of Pier 3 (immediately north of the habitat protected area): Open Water Restricted Area. No structures or moorage allowed. Vessel access is allowed for temporary support operations only. Between March 1 and June 30 of each year, non-emergency motorized vessel operations are restricted to 3 hours maximum duration per 24-hour period, to minimize noise and vessel movement impacts to migrating salmon. Vessels will be able to access this area while moving, but they will not be allowed to anchor or moor, unless necessary for maintenance or monitoring of the habitat area. Vessels operating in this area will support vessels necessary for short positioning operations, safety, environmental protection, emergency response, or tribal fishing. Vessels in this area will include skiffs or tugs that will be involved in the process of positioning a larger vessel or drydock at Pier 3, or vessels used to support maintenance of the habitat area, deploy booms, inspect the wharf, or provide emergency response.

## **3.0 DESIGN PROCESS**

The proposed concept for the SW Yard Project is presented in Section 2.0. Approximately 2.4 acres of new intertidal, marsh, and riparian area will be created consisting of:

- 0.24 acres of riparian buffer
- Approximately 2.15 acres of off-channel habitat including intertidal area marsh vegetation and migration corridor with an agreed upon design developed with Trustees

The Trustee/Performing Parties design team will refine the SW Yard Project concepts within the identified project boundaries to maximize the habitat functions and values. The final design of the SW Yard Project will restore/create at least 90 percent of the areas identified above, or a lesser amount if otherwise approved by the Trustees.



The Performing Parties will submit design documents to the Trustees for review and approval at multiple stages of design. This process will facilitate Trustee involvement and support throughout the design process, and consistency between design and permitting. This process, and the specific design documentation required, is described in Section 7.1.

Final design of the SW Yard Project must be approved by the Trustees before the Trustees authorize the Performing Parties to begin construction.

The investigations or evaluations required to support design and construction are discussed below.

### 3.1 ENVIRONMENTAL EVALUATION

**Upland Soils.** A Pre-Design Investigation will be conducted to determine the quality of existing soil that will be exposed following demolition of the Ship Building Ways, and which will form the deeper underlying soils below the imported substrates to be placed within the marsh habitat area. It is anticipated that the pre-design investigation will be conducted utilizing Geoprobe borings, which will be installed through holes cut in the existing Ship Building Ways surface.

A Sampling and Analysis Plan (SAP) for the pre-design investigation was developed in early 2018 by the Performing Parties. The SAP was reviewed and approved by USEPA and the Trustees in July 2018. The SAP compiles existing information on soil and groundwater quality and historical use; defines the site conceptual model for contaminant transport; and, based on the conceptual model, defines the location and depth of borings, sampling frequency, and protocols. The SAP also defines analytical methods and appropriate soil quality criteria to be used in evaluation of resultant data. The results of the environmental evaluation will be utilized to determine with USEPA and the Trustees whether any soil remedial action should be conducted in conjunction with construction of the habitat project.

**Habitat Surfaces.** Sampling and analysis will be performed to assure that all imported material and all constructed habitat surfaces are confirmed clean for all constituents per the Sediment Quality Standards (SQS), also known as the Sediment Cleanup Objectives (SCO) presented in the Sediment Management Standards (SMS; Washington Administrative Code 173-204). Analytical procedures and suitability criteria will be reviewed and approved by the Trustees and USEPA as part of the final design process. Following construction completion, monitoring for potential recontamination will be performed as described in Section 6.2.

### 3.2 GEOTECHNICAL AND HYDRODYNAMIC EVALUATION

In support of the WW Bench engineering design, Coast & Harbor Engineering performed a design evaluation study (Appendix C of the OMMP; Floyd|Snider 2007). This study developed design criteria for the substrate fill and submerged riprap steep slope based on a site-specific hydrodynamic evaluation and evaluated stability of substrate fill, the proposed rock buttress fill design, and the submerged riprap slope transition to the substrate mix backfill layer. This evaluation included the assessment of the wave action and erosive forces that will be acting on the WW Bench.

The SW Yard Project will be designed utilizing the information derived for the WW Bench design, and additional geotechnical input. Specific habitat mix gradations will be selected for the different areas of the site, based on anticipated wave action and vessel wake forces. Habitat mix gradation

for each area will be reviewed and approved by the Trustees during design review. As the design process moves forward, other geotechnical considerations will be evaluated as needed.

### **3.3 STORM DRAIN AND UTILITY RECONFIGURATION EVALUATION**

Significant areas of the shipyard will be demolished to enable construction of the SW Yard Project. Prior to design, the existing utilities and storm drains in the affected area will be surveyed and evaluated. The design for structural demolition of Pier 1, Pier 1A, the Ship Building Ways, and Pier 2P will include design for decommissioning or rerouting of affected utilities. All storm drainage within the area defined as “light industrial” in the Vigor Shipyard NPDES permit, including all storm drainage within the area affected by the SW Yard Project, will be rerouted. New stormwater conveyance will be installed, and stormwater treatment will be provided, to meet Ecology’s water quality requirements. Storm drain rerouting will be designed to avoid impact to the off-channel habitat area. Preliminary plans for storm drain rerouting will be reviewed by the Trustees and Ecology’s Water Quality Program during design.

### **3.4 UNDER-PIER SEDIMENT CLEANUP**

As an integral part of the habitat construction project, final sediment cleanup will be conducted below the demolished pier structures in accordance with Vigor’s CERCLA Consent Decree, Civil Action No. CV03-1179 with the USEPA, and in accordance with lease terms between Vigor and the Washington State Department of Natural Resources (DNR). During the sediment remedial action for the TSSOU conducted in 2005, under-pier contaminated sediments in this area were covered with 1 foot of sand. The USEPA and DNR agreements with Vigor state that at such time that the pier structures are demolished, the under-pier sediments will be permanently remediated. In order to construct the proposed habitat project, Piers 1, 1A, shipways and Pier 2 Platform will be demolished. This pier demolition will make under-pier contaminated sediments accessible for permanent remediation. The approximate locations of under-pier contaminated sediments to be remediated as part of this project are shown on Figures 4, 5, and 6.

Under the direction of USEPA, per the terms of the CERCLA Consent Decree, under-pier sediments to be remediated as part of this project will be characterized, alternatives for permanent remediation will be evaluated, and a preferred approach will be agreed to and documented following CERCLA requirements. Sediment characterization will be performed as an element of the SAP described in Section 3.1. A Remedial Action Work Plan, approved by USEPA, will define the work to be performed. The remedial construction will be included in the habitat project design, with associated specifications for conducting and documenting the work.

### **3.5 HABITAT PARAMETER IDENTIFICATION**

To assist in informing the design of habitat features for the proposed SW Yard Project, a review of habitat projects and inventories that have been completed along the Lower Duwamish River will be conducted. The review of habitat projects will be conducted in consultation with the Trustees and will identify similar habitat areas in the intertidal zone and high marsh zone (-2 to +12 feet MLLW) that currently exist in the northerly reaches of the Lower Duwamish River (north of the 1<sup>st</sup> Avenue South Bridge), including the East and West Waterways. The existing or restored vegetation within these areas will be evaluated. Documents to be reviewed include the literature review and habitat survey conducted per The Boeing Company’s (Boeing’s) NRD Settlement Scope of Work (Boeing 2009) and research completed by Bluefields Holdings on

behalf of the City of Seattle (City) for several City properties along the Waterway. Results of recent monitoring of juvenile salmonid use of restoration sites in the Lower Duwamish will also be reviewed to evaluate effects of elevations on fish access and use.

To further guide the planting design and establishment of native plant communities, additional reference sites will be investigated outside the Lower Duwamish Waterway. Three locations will be selected in collaboration with the Trustees that exhibit the following characteristics:

- Estuarine intertidal marshes situated at the mouth of a river
- Marshes with established plant material thriving within the +5 to +12 feet MLLW elevation range
- Sites located in areas of Puget Sound with salinity and tidal conditions similar to Elliott Bay

This use of reference sites to inform plant material selection is necessary given the unique location of the SW Yard Project at the mouth of the river. During pre-design of the SW Yard Project, these estuary reference sites will be inventoried and assessed to provide site-specific data regarding plant species composition, elevation, structure, and function to guide the restoration design for the Vigor site. Characteristics to be inventoried at the reference sites will include:

- Position in the watershed (proximity to the mouth of a river)
- Position in Puget Sound, salinity, and tidal characteristics
- Plant community species composition, distribution, elevation, and structure with emphasis on the dominant species and successional stage
- Soils with emphasis on soil texture, the quantity/quality of the organic component, and evidence of hydric soils
- Hydrologic characteristics and key structural and topographic features such as rock substrate, wet depressions, tidal creek conditions, riparian slope and swales, etc.

Reference sites will be used during the design phase of the project only, to inform plant material and substrate selection. Reference sites will not be used for comparison during monitoring.

#### **4.0 PERMITS REQUIRED PRIOR TO CONSTRUCTION**

Permits that will be required for construction of the SW Yard Project include:

- U.S. Army Corps of Engineers: Section 10 Work in Navigable Waters
- U.S. Army Corps of Engineers: Section 404 Discharge of Dredge or Fill Material
- Washington State Department of Ecology: 401 Water Quality Certification
- Washington State Department of Fish and Wildlife: Hydraulic Approval Project
- City of Seattle: Shoreline Substantial Development
- City of Seattle: Building and Grading

In-water permits will be acquired through the Joint Aquatic Resource Permit Application (JARPA) process. The JARPA will be provided to the Trustees. A National Environmental Policy Act (NEPA) DNS will be prepared for the project. The lead agencies for the State Environmental Policy Act (SEPA) and NEPA processes will be determined prior to permitting.

In addition to the permits listed above, an Aquatic Use Authorization from DNR is applicable. A portion of the proposed habitat will be constructed on State-Owned Aquatic Lands. In 2004, Vigor and DNR negotiated a new lease for the properties. This lease anticipated construction of NRD restoration projects, and defined NRD restoration as a permitted use. DNR will review and approve plans for the work to be performed on their property.

Additionally, Vigor's Individual National Pollutant Discharge Elimination System (NPDES) Permit with the Washington State Department of Ecology will need to be amended, to include updates for the reconfigured storm drains.

## **5.0 CONSTRUCTION, INITIAL HABITAT CREATION, AND INITIAL PLANTINGS**

After receiving written authorization from the Trustees to begin construction, the Performing Parties shall construct the project according to the SW Yard Project design developed under Section 3.0 of this plan. The construction phase of the SW Yard Project will include initial development of habitat and required plantings. Habitat development and initial planting shall be implemented to achieve the success criteria described in the following section.

## **6.0 MAINTENANCE AND MONITORING**

The SW Yard Project and WW Bench areas will be protected in perpetuity through deed restrictions implemented under the Consent Decree. Both areas will be maintained and monitored to ensure that the habitat restoration projects meet Trustee objectives. This section describes the Maintenance and Monitoring Plan that will be developed to ensure successful habitat restoration projects.

The Maintenance Plan will comprise two sections:

- Initial maintenance and adaptive management during the 10-year performance monitoring period.
- Additional maintenance and monitoring that will be conducted for an additional 20 years after the initial 10-year monitoring period.
- The intention of the Performing Parties and the Trustees is that the ecological functions provided by the habitat projects be maintained in perpetuity. The provisions of the Consent Decree address long-term stewardship and require Vigor to ensure that the property will not be used in a manner inconsistent with this intent.
- The Performing Parties will develop a long-term stewardship plan to be implemented after the initial 30-year monitoring period is completed to ensure that the project continues to function as intended. The long-term stewardship plan will be submitted

for Trustee review and approval following the initial 10-year performance monitoring period.

The initial 10-year maintenance requirements will be developed to ensure that newly planted vegetation becomes established and is not out-competed by invasive species or destroyed by herbivores. The long-term maintenance component of the plan will describe the maintenance activities that will be conducted after the initial 10-year monitoring. Elements included in the maintenance plan are discussed in Section 6.1.

A Monitoring Plan will be developed and followed to determine if the goals and objectives of the SW Yard Project are being achieved. The success criteria, monitoring methods, and frequency are discussed in Section 6.2 and summarized in Tables 2A, 2B, and 2C.

The physical monitoring defined in Table 2A is applicable to the WW Bench as well as the SW Yard Project. The monitoring schedule for physical monitoring at the WW Bench will be concurrent with the SW Yard Project. Monitoring defined in Tables 2B and 2C is applicable to the SW Yard Project only.

Monitoring plans and their implementation are additional key factors in a successful restoration project. Implementation of a monitoring plan will determine if:

- Restoration objectives are being met.
- The maintenance plan is sufficient.
- Contingency measures need to be taken.
- Adaptive management strategies need to be implemented.
- Contingency measures or adaptive management strategies are successful.

## 6.1 MAINTENANCE PLAN

The Maintenance Plan will include methods, frequency, and duration for the following activities:

- **Watering.** Watering will be necessary during plant material establishment. Plantings in some areas may require permanent watering. Weather information will be reviewed to evaluate during what portions of the year watering will be necessary. Monitoring of rainfall and/or soil moisture will be used to determine the need for watering during the first 2 years after plant installation. Watering methods will be defined in the Maintenance Plan.
- **Mulching.** Mulching will occur during initial plant installation. Supplemental mulching may occur during weeding activities, as necessary.
- **Weeding.** Weeding around shrubs will be important during the summer of the first year to ensure establishment and prevent stress to the plants from competition for resources. The frequency can be gauged by necessity but should occur at least twice during the spring (ideally May and June), and then once more during the summer months (August or September). Table 3 provides a list of common weed species that will need to be removed. Weeding will be performed using simple hand tools, (e.g., rakes, hoes). Chemical treatment (herbicides) will be considered only if physical removal fails.

- **Dead Plant Removal.** Dead plant material will only be removed after scheduled monitoring to allow for the accurate assessment of planting success needed for the monitoring program. Replacement planting will be detailed under contingency measures in the monitoring plan.
- **Herbivore Control Measures.** Herbivore barriers and plant protection devices will be visually inspected for maintenance issues. Initially, control measures will be inspected at a high frequency, and immediate repairs will be made as necessary until plants are established.
- **Debris Removal.** Anthropogenic material that potentially impairs habitat functions will be removed from the sites on an as-needed basis. Debris removal is relevant to both the SW Yard Project and the WW Bench project areas.

Long-term maintenance will be conducted for 20 years after the initial 10-year period to ensure that the habitat functions of the SW Yard Project and the WW Bench are maintained. This includes maintaining vegetation and other habitat attributes, controlling invasive vegetation, removing debris, and undertaking actions to address disturbances or perturbations with a foreseeable probability of occurrence, excluding “force majeure” events as defined under the Consent Decree if the Trustees agree that a “force majeure” event makes corrective action or further maintenance impossible. The plan will include a description of activities that will be conducted to maintain the ecological function of the SW Yard and WW Bench Projects. These activities will be conducted on an as-needed basis.

## 6.2 MONITORING PLAN

The monitoring plan elements are summarized in Tables 2A, 2B, and 2C.

**Goals and Objectives.** The goal of the Vigor habitat restoration projects is to create self-sustaining habitats that will restore and enhance ecosystem processes that support the array of key species groups the Trustees believe may have been injured due to contamination in the Lower Duwamish River. The proposed SW Yard Project is intended to restore important habitat types historically present in the Lower Duwamish River and provide appropriate habitat diversity and ecological niches necessary for foraging and refuge opportunities for juvenile salmon, birds, and resident fish species.

**Success Criteria.** Success criteria will be used during the monitoring period to determine if the habitat project goals are being met. The criteria chosen are adapted from monitoring guidelines developed for the Lower Duwamish River (EBDRP 2000) and Commencement Bay (CBNRT 2000) restoration projects and other sources of monitoring guidelines. These success criteria were applied in the Boeing habitat restoration completed in 2015 as described in their SOW (Boeing 2009). The success criteria presented here are modified from those applied in the Boeing habitat restoration to apply to the Vigor habitat restoration projects. The criteria are chosen because they are standards that can be measured and for which there are contingency or adaptive management measures that can be applied during the monitoring period.

- Physical Criteria
  - Intertidal habitat area integrity

- Material stability
- Sediment/soil structure
- Tidal circulation
- Elevation and channel morphology
- Biological Criteria
  - Marsh vegetation areal coverage
  - Marsh vegetation community survival
  - Non-native or invasive species areal coverage
  - Herbivore control measures
  - Riparian vegetation areal coverage
  - Riparian vegetation community survival

All physical and biological criteria are applicable to the SW Yard Project, as the SW Yard Project off-channel habitat includes fine-grained substrates, tidal channels, marsh, and riparian vegetation. Only the physical criteria of intertidal habitat area integrity and material stability are applicable to the WW Bench.

**Monitoring Frequency.** A detailed as-built survey will be completed within 30 days after the initial planting. Monitoring will occur over a 10-year period, at the frequencies defined in Tables 2A, 2B, and 2C. Biological monitoring will be performed during the growing season after deciduous plants have flowered or leafed out.

**Contingency Measures.** Contingency measures will be developed as part of the Monitoring Plan for each success criterion in the event that a standard is not met. Contingency measures are activities designed to help meet success criteria, such as replacing (replanting) dead plant material, adding soil amendments, installing supplemental irrigation, and augmenting herbivore exclusion systems. Prior to any contingency measure being implemented, an investigation as to why the criterion was not met will be conducted. In the event that a success criterion is not met because of installation flaws or lack of routine maintenance, then contingency measures will be implemented as determined by the Trustees. If the success criterion is not met because of design flaws or mortality due to herbivory, or because routine maintenance is not sufficient, then an adaptive management approach will be used, in consultation with and as approved by the Trustees.

**Adaptive Management.** Prior to any adaptive management measures being implemented, the cause for the failure to meet a success criterion will be investigated and will be discussed with the Trustees and the proposed measures approved by the Trustees. Adaptive management measures could include, but are not limited to, changing plant species, changing plant densities, adding fertilizer, or installing additional herbivore exclusion systems.

**Monitoring Methods.** Monitoring methods are identified in Tables 2A, 2B, and 2C where practical. The Performing Parties/Trustee team will further develop the methods to be used for monitoring the physical and biological parameters identified in Tables 2A, 2B, and 2C, during the development of the Monitoring Plan. The methods will be documented as standard operating procedures in the Monitoring Plan.

### 6.2.1 Physical Monitoring

Physical monitoring will be conducted at both the SW Yard Project and the WW Bench. Physical monitoring will address intertidal habitat area integrity, material stability, tidal circulation, sediment/soil structure, and elevation/channel morphology. Specific physical monitoring success criteria, monitoring tasks, monitoring methods, schedule, and contingency measures are described in Table 2A.

### 6.2.2 Biological Monitoring

As described above, the SW Yard Project is intended to restore important habitat types historically present in the Lower Duwamish River, including tidal marsh and riparian vegetation. Elevations suitable for tidal marsh development will be planted with aquatic vascular plants within the footprint of the SW Yard Project. The goal of the marsh plantings is to establish tidal marsh communities that will provide critical habitat functions, such as feeding and refuge for anadromous salmonids and other species. The establishment of marsh vegetation is one of the primary objectives of the Trustees. Wetland vegetation is one of the most obvious and straightforward indicators of habitat condition. Vegetation provides habitat structure for aquatic and terrestrial organisms, facilitates sediment accretion and build-up of marsh substrate, and serves as a source of organic material to support detritus-based food webs.

The proposed restoration will create a large area that is suitable for intertidal habitat and tidal marsh colonization. After demolition of Pier 1A, the Ship Building Ways, Pier 1, and Pier 2P, the shoreline will be filled and appropriate elevations will be planted with marsh vegetation. Changes in vascular plant populations often lag behind environmental changes, because most species are limited in their ability to become established even when the habitat structure is appropriate. Periodic examination of the vegetation will assist in the identification of potential problems, such as colonization by invasive species or excessive herbivore damage. Useful measures of vegetation community condition include areal coverage and survival rates. Biological monitoring success criteria, monitoring tasks, monitoring methods, schedule, and contingency measures are described in Table 2B. The key elements for marsh vegetation biological monitoring are described in the following sections.

#### 6.2.2.1 *Marsh Vegetation Areal Coverage and Survival*

**Success Criteria.** Percent cover of thriving, healthy vegetation of targeted marsh vegetation species should be stable or increasing within the elevations suitable to marsh establishment, with the desired mix of species present. Objectives are 25 percent cover of targeted species at 3 years, 50 percent at 5 years, and not less than 75 percent after 10 years.

**Monitoring Tasks.** An as-planted survey will be conducted following initial planting(s) to confirm that planting(s) are installed per the design specifications. An aerial photograph of the full project area will be collected following initial planting(s) and at each monitoring event.

Post-construction, permanent transects will be placed at equal intervals traversing the marsh area north to south. The project area is controlled by Vigor and is secure with no public access. Therefore, permanently placed stakes will not be disturbed and can be used to re-establish the transects for each sampling period. The number of transects will be based on habitat area and shape to adequately define the entire project. The transects will encompass all portions of the project area



suitable for intertidal vegetation establishment. Permanent photo-points will be established along the transects, and color photographs will be collected during each monitoring event. A general walking inspection of the full marsh area will be made to identify any specific areas of concern regarding vegetative health.

Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in areal coverage of targeted marsh vegetation species, and overall vegetative community health and survival. Monitoring will be conducted in Years 0, 1, 2, 3, 5, 7, and 10.

**Contingency Measures.** Evidence of decreasing areal coverage of marsh vegetation target species should trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species, elevation, and other design factors will be reexamined and adjusted if new information suggests adjustment is appropriate.

#### **6.2.2.2 Marsh Area Invasive Species Areal Coverage**

**Success Criteria.** The project should not at any time contain more than 5 percent cover by area of non-native or invasive plant species. Invasive plant species of special concern include, but are not limited to, *Spartina* spp. (cordgrass), *Lythrum salicaria* (purple loosestrife), *Phalaris arundinacea* (reed canarygrass), and *Phragmites communis* (common reed).

**Monitoring Tasks.** Monitoring will be conducted as described above in Section 6.2.2.1. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated. Monitoring will be conducted in Years 0,<sup>4</sup> 1, 2, 3, 5, 7, and 10.

**Contingency Measures.** Any occurrence of non-native and invasive species exceeding 5 percent by vegetated area will be controlled primarily by physical means (weeding). Physical removal will occur as soon as invasive plants are identified and prior to seed set. Chemical treatment (herbicides) will only be considered if physical removal fails and will only be utilized with Trustee approval. *Spartina* spp. that is found to colonize any portion of the site (irrespective of the areal coverage) will be immediately controlled.

#### **6.2.2.3 Marsh Vegetation Herbivory Avoidance**

**Success Criteria.** Physical herbivore barriers shall successfully prevent damage to vegetation by Canada geese, until vegetation is fully established. Installation of devices must take place before or simultaneous with planting of marsh vegetation.

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<sup>4</sup> “Year 0” is defined as directly following construction completion at the SW Yard Project. This definition of Year 0 will also be used at the WW Bench, so that monitoring dates are concurrent between the two areas. Biological monitoring to be conducted in Year 0 will be conducted within 60 days of completion of planting.

**Monitoring Tasks.** Periodic, and initially frequent, visual inspections of herbivore exclusion systems and immediate repair will be performed to reduce damage until the plant root systems have established themselves.

**Schedule.** Installation of devices must take place before or simultaneous with planting of intertidal vegetation. Devices will be maintained for at least 4 years post-planting (initial planting or replanting). Periodic monitoring will be used to confirm adequate site maintenance of devices. Observations will be logged at each monitoring event for 5 years post-planting (or replanting).

**Contingency Measures.** The Performing Parties shall immediately repair any damage to the herbivore exclusion devices caused by logs, trampling, geese, or other causes. Canada geese can destroy newly planted restoration project sites in a matter of hours. There are several exclusion device designs that have proven successful in studies conducted in the Lower Duwamish River and Commencement Bay, including those based on lessons learned at the recently completed habitat restoration at Boeing.

#### **6.2.2.4 Biological Contingency Measures**

Failure to meet the success criteria indicates that a basic restoration goal is not being met and will trigger discussions and potential investigations regarding possible causes. Data from an individual monitoring period indicating that a success criteria assessment measure is not in conformance will trigger discussions on the reason that the measure is not in conformance. If contingency measures are judged by the Trustees to be necessary, the Performing Parties will propose contingency measures in consultation with the Trustees and the Performing Parties will, upon the Trustees' written approval, implement the actions during the next 12 months. If the goals are not being met at Year 5, the Performing Parties will, in consultation with the Trustees, conduct an investigation of the reasons for the non-conformance, addressing the following questions:

- Can the cause of the non-conformance be identified?
- Is it technically feasible to modify or adjust the physical, chemical, or biological feature(s) of the marsh, or regulate operation or maintenance of the marsh, such that a parameter could subsequently achieve an acceptable level of development?
- What is the projected success and cost of the proposed modification?

Results of the investigation will determine modifications that may need to be implemented by the Performing Parties, which may include, but not be limited to: replanting, changing plant species, changing plant densities, regrading limited portions of the area, adding soil amendments, and excavating drainage channels. Implementing modifications after Year 5 will require monitoring of the performance assessment measures to continue in Years 6 through 11. Data from an individual sampling year during this period indicating that a performance assessment measure is not in conformance will trigger discussions on the potential to take additional contingency measures.

If the Performing Parties are required to implement corrective actions after Year 5, and have demonstrated best effort to satisfy the performance goals through Years 1 through 5 and Years 6 through 11 (including performing immediate contingency measures as needed), then the Performing Parties will not be required to implement additional corrective actions or conduct monitoring with regard to marsh vegetation past Year 11.

### **6.2.3 Additional Monitoring Requirements**

Additional monitoring requirements to be described in the plan will include fish and invertebrate prey resources that are present within the footprint of the SW Yard Project and will determine whether chemical contamination is present at levels of concern<sup>5</sup> in surface sediments at the SW Yard Project area over time. Detailed requirements are summarized in Table 2C.

#### **6.2.3.1 Fish Presence**

Sampling will be conducted during the peak of the anadromous salmonid juvenile migration period to determine presence and abundance of fish. Fyke nets will be used to collect and identify species and origin (for salmonids, hatchery, or natural origin salmonids) of all fish collected (record fork lengths for salmonids and identify as hatchery or natural origin). Salmonids will be identified to the genus level and species level unless there are specific problems such as the presence of bull trout and identifying them to that level. Non-salmonid fish species should also be identified to at least the genus level.

Monitoring will be conducted three times (early, mid, late) during peak of juvenile salmonid outmigration (March through June). The monitoring is to be conducted during Years 1, 2, 3, 5, 7, and 10. Failure of fish to use the areas could indicate that a basic restoration goal is not being met and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.

#### **6.2.3.2 Invertebrate Prey Resources**

Sampling will be conducted once per monitoring year during the peak juvenile salmonid outmigration to assess benthic community development. Benthic organisms will be sampled with 10-centimeter cores. Five samples will be collected in the off-channel habitat area. In each sample that is collected, invertebrates will be identified to the lowest practical taxonomic level and enumerated. In addition, to measure one of the desired functions of riparian vegetation at the site, fallout insects will be sampled using floating plastic bins distributed throughout the vegetated areas of the site. The sampling is to be conducted during Years 1, 2, 3, 5, 7, and 10. Failure of the benthic community to develop could indicate that a basic restoration goal is not being met and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.

#### **6.2.3.3 Chemical Contamination**

The restoration sites will be monitored to determine if the habitat substrate (sediment surface) becomes contaminated over time. Samples will be collected in the high marsh and associated tidal channels at locations agreed to with the Trustees. The sampling is to be conducted during Years 2, 5, and 10. Sediments will be sampled using grab samples collecting material representative of the top 10 centimeters. Samples will be evaluated for the SMS chemicals. Sample results will be compared to the SQS, also known as the SCO presented in the SMS (Washington Administrative Code 173-204). Analytical procedures and suitability criteria will be reviewed and

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<sup>5</sup> Levels of concern will be determined by Washington State SQS, described in this document in Section 6.2.3.3.

approved by the Trustees and USEPA as part of the final design process. Areas exceeding criteria will trigger discussions with USEPA and the Trustees on the possible causes and appropriate responses. As described in Section 3.3, several storm drains will be rerouted as part of this project. Storm drain rerouting will be designed to avoid impact to the off-channel habitat area. For storm drain outfalls in the vicinity of intertidal habitat benches, water quality requirements will be defined for Trustee approval.

## **7.0 DOCUMENTATION**

### **7.1 DESIGN DOCUMENTATION**

The Performing Parties will submit design documents to the Trustees for review and approval at multiple stages of design. For each design deliverable, formal comments from the Trustees will be provided. The Performing Parties will produce revised versions of each deliverable addressing Trustee comments and will prepare an accompanying “response to comments” document. This process will facilitate Trustee involvement and support throughout the design process.

The following design deliverables will be submitted for review and approval:

1. Conceptual design of habitat area. This package will define the proposed openings to the off-channel habitat area, elevations and contouring within the habitat area, and general planting zones. Trustee approval of this package will be secured prior to preliminary design.
2. Habitat mix gradations and substrate selection package. This package will include proposed gradation for habitat mixes to be used in different areas of the project, habitat mix material specification, and specifications for other primary substrates to be used within the marsh and intertidal areas. This package will include geotechnical and hydrodynamic rationale for selection. Trustee approval of this package will be secured prior to preliminary design.
3. Preliminary design. This package will include preliminary design for all project elements. The level of detail of preliminary design will be based on what is necessary to support the JARPA application, equivalent to an approximately 60% design level. This package will include grading plans and cross sections, material specifications, description of construction sequencing, and planting plans. This package will also include results of the environmental evaluation, geotechnical evaluation, storm drain and utility reconfiguration evaluation, under-pier sediment cleanup approach, and habitat parameter identification described in Sections 3.1, 3.2, 3.3, 3.4, and 3.5, respectively. Approval of this package will be secured prior to submitting the JARPA.
4. Final design. This package will include final design for all project elements. The final design package will include changes to the project that may be required as part of the permitting process. Approval of the final design package will be secured prior to finalizing construction bid documents. Final design of the SW Yard Project must be approved by the Trustees before the Trustees authorize the Performing Parties to begin construction, per Section 3.0. The final design package will include, at a minimum, the following:
  - Detailed design drawings

- Material specifications
- Description of construction sequencing
- Estimated construction schedule
- Planting plans and plant schedule
- Maintenance and Monitoring Plan as described in Section 6.0

## **7.2 CONSTRUCTION COMPLETION REPORT**

Within 60 days of completion of the construction activities, a construction completion report will be prepared that describes the as-built condition of the SW Yard Project. This report will be submitted to the Trustees with the Notice of Completion of Construction in the manner and as required in the Consent Decree and will serve as the baseline for monitoring that will be conducted as described in Section 6.2.

## **7.3 MONITORING AND MAINTENANCE REPORTS**

After each monitoring event as described in Section 6.0 and Tables 2A, B, and C, a report will be prepared for submittal to the Trustees. A draft report will be submitted to the Trustees within 90 days of each monitoring event. Following Trustee review and comment, reports will be finalized.

The following will be included in each report:

- Dates of monitoring activities
- A narrative description of methods and contingency measures taken
- Identification of planted and naturally recruited trees and shrubs
- Data tables
- Species lists
- Color photographs
- Aerial photographs or maps showing extent of vegetation coverage with dominant vegetation types
- Interpretation of results, evaluation relative to success criteria
- A description of maintenance activities that were conducted

Within 90 days of completion of the monitoring, a monitoring completion report will be submitted to the Trustees with the Notice of Completion of Monitoring. Upon completion of the 10-year monitoring period, the Performing Parties will provide written Notice of Completion of Vegetation and Habitat Development and Monitoring Obligations to Trustees in accordance with Sections VII (Restoration Projects) and XXII (Notices and Submissions) of the Consent Decree.

## 8.0 SCHEDULE

All required deliverables and implementation steps are identified in Table 4 attached.

Trustee review of deliverables will be completed within 30 days of receipt, unless a longer review timeframe is expressly set forth in the Consent Decree or approved by all parties in advance. Any delay in the Trustees' review of deliverables shall not, of itself, extend the time for performance of any obligation by the Performing Parties. Deadlines for performance of an obligation may be extended due to additional review time by the Trustees if the Performing Parties provide notice and support for the need for an extension and the Trustees agree that the extension is necessary due to the delay.

To accelerate the overall schedule for habitat restoration, at the Performing Parties' discretion, design tasks per Section 3.0 of this document, design documentation (Section 7.1), and initiation of permitting (Section 4.0) may occur prior to the Effective Date of the Consent Decree. Any work conducted by the Performing Parties prior to the Effective Date of the Consent Decree is at the Performing Parties' full risk and cost; the Trustees shall have no responsibility for any costs incurred by the Performing Parties if a Consent Decree is not entered by the Court.

Initiation of Construction is contingent on Consent Decree entry by the Court and Trustee written authorization for the Performing Parties to commence construction, pursuant to Section VII (Restoration Projects) of the Consent Decree.

Additionally, initiation of construction is contingent on receipt of all necessary permits or documentation of substantive compliance from federal, state, and local agencies. Construction work is also contingent on the authorized in-water construction work windows. Completion of demolition, construction, and planting may require multiple in-water work seasons. The SW Yard Project construction will be completed in accordance with the Trustee-approved construction schedule submitted as part of the final design package.

## 9.0 REFERENCES

Boeing (The Boeing Company), 2009, Boeing Habitat Projects, Attachment A of Consent Decree No. CV-10-758 RSM, Seattle/Tukwila, Washington, December.

CBNRT (Commencement Bay Natural Resource Trustees), 2000, Commencement Bay, Natural Resource Damage Assessment Restoration Monitoring Plan: NOAA, U.S. Department of Interior and the State of Washington, Seattle, Washington.

EBDRP (Elliott Bay/Duwamish Restoration Program), 2000, Intertidal Habitat Projects Monitoring Program, Panel Publication 23, U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office, Lacey, Washington.

Floyd|Snider, 2007, Final Operation, Maintenance, and Monitoring Plan, Todd Shipyards, Sediment Operable Unit, Prepared for Todd Pacific Shipyards Corporation, December 13.

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## Tables

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Scope of Work  
Vigor Shipyards Habitat Projects

**TABLE 1**  
**QUANTIFICATION OF HABITAT RESTORATION ELEMENTS**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

Natural Resource Benefits		Natural Resource Work at Vigor Shipyards		
		Work Performed as Part of TSSOU Remedial Action (2004 to 2006)	Additional Habitat Restoration in the SW Yard to be Performed as Required by NRD Settlement CD	Total
Habitat Area Restored/Created	Riparian	None	0.29-acre riparian buffer between +18 and +12 feet MLLW	0.29 acres
	Marsh	None	0.35-acre marsh vegetation between +5 and +12 MLLW	0.35 acres
	Intertidal	0.47-acre habitat bench between +2 and -2 feet MLLW	2.03 acres between -2 and +5 MLLW	2.5 acres
Total Area Dedicated to Habitat (Riparian + Marsh + Intertidal)		0.47 acres	2.67 acres	3.14 acres
Overwater Coverage Removed		69,784 sq. ft (or 1.60 acres)	49,800 sq. ft (or 1.14 acres)	2.74 acres
Uplands Converted to Aquatic Habitat Area		None	64,500 sq. ft (or 1.48 acres)	1.48 acres
Creosote-Treated Pilings Removed		Approx. 2,770 piling	Approx. 3,000 piling	5,770 pilings
Riprap Armored Slope Area Softened with Habitat Mix*		99,400 sq. ft (or 2.28 acres) above elevation -10 feet MLLW	33,500 sq. ft (or 0.77 acres) above elevation -10 feet MLLW	3.05 acres

Note:

- \* At the time of construction, as a one-time pilot, voids within riprap armored slope above elevation -10 MLLW will be filled with habitat mix. This is to be conducted over approximately 3 acres, and is not intended to be replenished if erosional forces cause the habitat mix to move downslope.

Abbreviations:

- MLLW Mean Lower Low Water  
sq. ft Square feet  
SW Yard Southwest Yard  
TSSOU Todd Shipyard Sediment Operable Unit

Scope of Work  
Vigor Shipyards Habitat Projects

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**TABLE 2A**  
**SUCCESS CRITERIA FOR RESTORATION PROJECTS (PHYSICAL CRITERIA)**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

	<b>Intertidal Habitat Area Integrity</b> (SW Yard Project and WW Bench)	<b>Material Stability</b> (SW Yard Project and WW Bench)	<b>Habitat Mix Stability</b> (SW Yard Project and WW Bench)	<b>Tidal Circulation</b> (SW Yard Project Only)	<b>Sediment/Soil Structure</b> (SW Yard Project Only)	<b>Elevation/Channel Morphology</b> (SW Yard Project Only)
<b>Description:</b>	The total acreage of each elevation zone between +12 ft MLLW and -2 ft MLLW will remain at least 90% of the as-built acreage.	The as-designed contour elevations, especially for plant introductions, will be +/- 0.5 ft of the elevations specified in the construction plan. 75% of the target elevations will be maintained through Year 5.	Habitat mix will remain present in migration corridor and WW Bench.	The tidal amplitude, as determined by both timing and elevation of high and low tide events, is equivalent inside and outside of the project area.	Over time, the site may accumulate fine-grained materials and organic matter. This would be evidenced by a decrease in mean grain size and increase in organic carbon in the surface sediments and site soils. Sediment/soil structure data will be collected to assist in defining potential contingency measures associated with biological monitoring.	The as-designed low gradients necessary for marsh development are stable over time.
<b>Monitoring Tasks:</b>	Estimate the total acreage in each elevation zone between +12 ft MLLW and -2 ft MLLW of the project and provide "as-built" plan drawings upon project completion. Using the "as-built", and by visual inspection using permanent transects spaced in equal intervals north to south in the marsh areas, identify "as-builts," and by visual inspection using permanent transects spaced in equal intervals north to south in the marsh areas, identify erosional areas. Visually inspect after extreme episodic flood events to determine erosional impacts.	"As-built" plan drawings will be provided upon project completion. Using the "as-builts," and by visual inspection using permanent transects spaced in equal intervals north to south in the marsh areas, estimate changes in surface topography. Visually inspect after extreme episodic flood events to determine erosional impacts.	Periodic visual inspections at low tide of the migratory corridor and the WW Bench for changes in habitat mix presence and gradation. Inspections will be made at permanent transect locations representative of site conditions.	Periodic visual inspections of the project area for impeded tidal flow, or potential fish stranding. Record tidal stage from tidal gauges during inspections.	Determine grain size distribution and organic carbon determination by collecting core samples in conjunction with benthic invertebrate sampling. Test for total nitrogen using standard analytical techniques (if warranted due to concerns about vegetation health).	Estimate changes in gradient annually (after runoff) and after episodic flood events using permanent transects spaced in equal intervals north to south in the marsh areas.
<b>Monitoring Methods:</b>	Geo-referenced aerial photography, visual inspection, photo-points.	Geo-referenced aerial photography, visual inspection, photo-points.	Low tide visual inspection.	Tidal gauges, visual inspection.	Sampling as defined for benthic invertebrate sampling (Table 2C).	Geo-referenced aerial photography, visual inspection, photo-points.
<b>Schedule:</b>	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.
<b>Contingency Measures:</b>	Observation of deviation from this criterion would trigger investigation into the size of the area affected, evaluation of the cause, and potential actions.	Non-structural approaches such as vegetation, fiber mats, or other such "soft" engineered options, will be considered to stabilize excessive erosion.	Observation of significant erosion or removal of habitat mix would trigger investigation into the size of the area affected, evaluation of the cause, and potential actions.	Failures of tidal circulation or inundation as prescribed for the site triggers discussion of potential remedies.	If the intertidal sediments or upland soils do not support the biological production anticipated, amendments can be considered to augment nutrient deficiencies.	Gradient changes that limit the establishment of marsh vegetation or impact tidal circulation will trigger discussion of potential remedies, which may include both structural and non-structural alternatives.

Abbreviations:  
Year 0 "Year 0" is defined as directly following construction completion at the SW Yard Project. This definition of Year 0 will also be used at the WW Bench, so that monitoring dates are concurrent between the two areas.  
ft Feet  
MLLW Mean Lower Low Water  
SW Yard Southwest Yard Habitat Project  
WW Bench West Waterway Habitat Bench

Scope of Work  
Vigor Shipyards Habitat Projects

**TABLE 2B**  
**SUCCESS CRITERIA FOR RESTORATION PROJECTS (BIOLOGICAL CRITERIA)**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

(Biological Criteria in this Table 2B are applicable at SW Yard Project Area only – marsh and riparian zones)

Description:	Marsh Vegetation Areal Coverage and Survival	Marsh Area Invasive Species Areal Coverage	Herbivore Control Measures	Riparian Vegetation Areal Coverage and Survival	Riparian Area Invasive Species Areal Coverage
<b>Monitoring Tasks:</b>	Percent cover of thriving, healthy vegetation of targeted marsh vegetation species should be increasing (or stable at maturity) within the elevations suitable to marsh establishment, with the desired mix of species present. Objectives are 25% cover of targeted species at 3 years, 50% cover at 5 years, and not less than 75% after 10 years.	The project should not at any time contain more than 5% cover by area of non-native or invasive plant species within the marsh elevations (below elevation +12 ft MLLW).	Physical herbivore barriers shall successfully prevent damage to vegetation by Canada geese or other herbivores, until vegetation is fully established. Installation of devices must take place before or simultaneous with planting of marsh vegetation. Periodic, and initially frequent, visual inspections of herbivore exclusion systems shall be conducted, with immediate repair to reduce damage until the plant root systems have established themselves. Devices must be maintained for 4 years post-planting (initial planting or re-planting). Periodic monitoring should confirm adequate site maintenance of devices. Observations will be logged at each monitoring event for 5 years post-planting (or re-planting). Visual inspection.	Percent cover of thriving, healthy native riparian vegetation should be stable or increasing over time, and cover not less than 90% of the upland vegetated area of the project after 10 years. A diversity of species should be present - a minimum of 5% cover each of six species shall be present, ideally at least four species other than willow, alder, and cottonwood. An as-planted survey will be mapped following initial planting(s). The "as-builts" will be used to confirm that the plantings are installed per the design specifications. A color aerial photograph of the full project area will be collected following initial planting(s) and at each monitoring event. Permanent photo-points will be established through the riparian zones and color photographs will be collected each sampling period. A general walking inspection of the riparian areas will be made to identify any specific areas of concern regarding vegetative health. Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in areal coverage of targeted riparian vegetation species, and overall vegetative community health and survival.	The project should not contain more than 5% cover by area of non-native or invasive species. Monitoring will be performed as described for Riparian Vegetation Areal Coverage and Survival. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated.
<b>Monitoring Methods:</b>	Post-construction, permanent transects will be placed at equal intervals traversing the marsh area north to south. Permanent photo-points will be established along the transects and color photographs will be collected during each monitoring event. A general walking inspection of the full marsh area will be made to identify any specific areas of concern regarding vegetative health. Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in aerial coverage of targeted marsh vegetation species, and overall vegetative community health and survival.	Monitoring will be performed as described for Marsh Vegetation Areal Coverage and Survival. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated.	Periodic, and initially frequent, visual inspections of herbivore exclusion systems shall be conducted, with immediate repair to reduce damage until the plant root systems have established themselves. Devices must be maintained for 4 years post-planting (initial planting or re-planting). Periodic monitoring should confirm adequate site maintenance of devices. Observations will be logged at each monitoring event for 5 years post-planting (or re-planting). Visual inspection.	Permanent photo-points will be established through the riparian zones and color photographs will be collected each sampling period. A general walking inspection of the riparian areas will be made to identify any specific areas of concern regarding vegetative health. Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in areal coverage of targeted riparian vegetation species, and overall vegetative community health and survival.	Monitoring will be performed as described for Riparian Vegetation Areal Coverage and Survival. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated.
<b>Monitoring Schedule:</b>	Geo-referenced aerial photography, visual inspection, photo-points. Years: 0, 1, 2, 3, 5, 7, and 10.	Geo-referenced aerial photography, visual inspection, photo-points. Years: 0, 1, 2, 3, 5, 7, and 10.	Years 0 through 5 post-planting (or re-planting). If the plant community is well-established by Year 3, monitoring may be discontinued.	Geo-referenced aerial photography, visual inspection, photo-points. Years: 0, 1, 2, 3, 5, 7, and 10.	Geo-referenced aerial photography, visual inspection, photo-points. Years: 0, 1, 2, 3, 5, 7, and 10.
<b>Contingency Measures:</b>	Evidence of decreasing areal coverage of marsh vegetation target species or evidence in reduction in plant community health and survival will trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species, elevation, and other design factors will be reexamined and adjusted if new information suggests adjustment is appropriate.	Any occurrence of non-native and invasive species exceeding 5% by vegetated area, will be controlled primarily by physical means (weeding). Physical removal will occur as soon as invasive plants are identified and prior to seed set. Chemical treatment (herbicides) will only be considered if physical removal fails. <i>Spartina</i> spp. that is found to colonize any portion of the site (irrespective of the areal coverage) will be immediately controlled.	Immediately repair of any damage to the herbivore exclusion devices caused by logs, trampling, or geese. If damage is observed from Nutria, protective covers around individual plants or stands will be installed and monitored by visual inspection.	Evidence of reduction in areal coverage of targeted riparian vegetation species or evidence in reduction in plant community health and survival will trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species, elevation, and other design factors will be reexamined and adjusted if new information suggests adjustment is appropriate.	Any occurrence of non-native and invasive species exceeding 5% by vegetated area, will be controlled primarily by physical means (weeding). Physical removal will occur as soon as invasive plants are identified and prior to seed set. Chemical treatment (herbicides) will only be considered if physical removal fails. <i>Spartina</i> spp. that is found to colonize any portion of the site (irrespective of the areal coverage) will be immediately controlled.

Abbreviations: Year 0 "Year 0" is defined as directly following construction completion. Biological monitoring to be conducted in Year 0 will be conducted within 60 days of completion of planting if Feet

MLLW Mean Lower Low Water  
SW Yard Project Southwest Yard Habitat Project

Scope of Work

Vigor Shipyards Habitat Projects

**TABLE 2C**  
**ADDITIONAL MONITORING REQUIREMENTS**

Vigor Shipyards Habitat Projects  
Seattle, Washington

(Additional Monitoring Requirements in this Table 2C are applicable at SW Yard Project Area only - marsh and tidal channels)

	<b>Fish Presence</b>	<b>Invertebrate Prey Resources</b>	<b>Chemical Contamination</b>
<b>Description:</b>	Estuarine fish should access the project, with increasing utilization and colonization by resident species. Juvenile salmonids should be present.	Invertebrate prey taxa and fallout insects known to be important to juvenile salmonids should be present.	Habitat substrate sediments should remain free of chemical contamination at levels of concern, determined by Washington State SQS standards.
<b>Monitoring Tasks:</b>	Monitor fish use: Record fork length and source (hatchery or wild) for salmonids. Record presence (species) of non-salmonid fishes. Salmonids will be identified to the genus level and species level unless there are specific problems such as the presence of bull trout and identifying them to that level. Non-salmonid fish species should also be identified to at least the genus level.	Monitor benthic invertebrate community development. Five samples will be collected in the high marsh and associated tidal channels. In each sample that is collected, invertebrates will be identified to the lowest practical taxonomic level and enumerated. In addition, fallout insects will be sampled using floating plastic bins distributed throughout the site.	The restoration sites will be monitored to determine if the habitat substrate (sediment surface) becomes contaminated over time. Five sediment samples will be collected in the high marsh and associated tidal channels. Samples will be evaluated for the Sediment Management Standards chemicals. Sample results will be compared to the Sediment Cleanup Objectives (benthic SQS - sediment quality standards).
<b>Monitoring Methods:</b>	Fyke net. Nets set before high tide and monitored during subsequent ebb. Monitor three times (early, mid, late) during peak of juvenile salmonid outmigration (typically March through June).	Samples will be collected using grab samples collecting material representative of the top 10 centimeters (cm). Samples will be collected once each monitoring year during the peak juvenile salmonid outmigration.	Sediments will be sampled using grab samples collecting material representative of the top 10 cm. Samples will be collected concurrent with the benthic invertebrate sampling, and adjacent to the benthic invertebrate sample locations.
<b>Schedule:</b>	Years: 1, 2, 3, 5, 7, and 10.	Years: 1, 2, 3, 5, 7, and 10.	Years: 2, 5, and 10.
<b>Contingency Measures:</b>	Failure of fish to use the areas could indicate that a basic restoration goal is not being met, and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.	Failure of the benthic community to develop could indicate that a basic restoration goal is not being met, and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.	Contamination of the sediment surface at levels of concern could indicate that a basic restoration goal is not being met, and will trigger discussions regarding possible causes and appropriate responses.

Scope of Work  
Vigor Shipyards Habitat Projects

**TABLE 3**  
**NOXIOUS WEEDS LIST**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

Common Name	Scientific Name	State Listing <sup>1</sup>	King County Listing <sup>2</sup>	Common Name	Scientific Name	State Listing <sup>1</sup>	King County Listing <sup>2</sup>
absinth wormwood	<i>Artemisia absinthium</i>	C	ND	knapweed, spotted	<i>Centaurea biebersteinii</i>	B	B
Austrian fieldcress	<i>Rorippa austriaca</i>	B	B	knapweed, Vochin	<i>Centaurea nigrescens</i>	A	A
babysbreath	<i>Gypsophila paniculata</i>	C	—	knotweed, Bohemian	<i>Polygonum bohemicum</i>	B	ND
blackberry, evergreen	<i>Rubus laciniatus</i>	—	WOC	knotweed, giant	<i>Polygonum sachalinense</i>	B	ND
blackberry, Himalayan	<i>Rubus armeniacus</i>	—	WOC	knotweed, Himalayan	<i>Polygonum polystachyum</i>	B	ND
blackgrass	<i>Alopecurus myosuroides</i>	B	B	knotweed, Japanese	<i>Polygonum cuspidatum</i>	B	ND
blueweed, viper's bugloss	<i>Echium vulgare</i>	B	B	kochia	<i>Kochia scoparia</i>	B	B
Brazilian elodea	<i>Egeria densa</i>	B	B	kudzu	<i>Pueraria montana var. lobata</i>	A	A
buffalobur	<i>Solanum rostratum</i>	A	A	lawnweed	<i>Soliva sessilis</i>	A	A
bugloss, annual	<i>Anchusa arvensis</i>	B	B	lepyrodicilis	<i>Lepyrodiclis holosteoides</i>	B	B
bugloss, common	<i>Anchusa officinalis</i>	B	B	longspine sandbur	<i>Cenchrus longispinus</i>	B	B
butterfly bush	<i>Buddleia davidii</i>	C	ND	loosestrife, garden	<i>Lysimachia vulgaris</i>	B	B
camelthorn	<i>Alhagi maurorum</i>	B	B	loosestrife, purple	<i>Lythrum salicaria</i>	B	B
clary sage	<i>Salvia sclarea</i>	A	A	loosestrife, wand	<i>Lythrum virgatum</i>	B	—
cockle, white	<i>Silene latifolia ssp. alba</i>	C	—	mayweed, scentless	<i>Matricaria perforata</i>	C	—
common catsear	<i>Hypochaeris radicata</i>	B	—	meadow clary	<i>Salvia pratensis</i>	A	A
common crupina	<i>Crupina vulgaris</i>	A	A	Mediterranean sage	<i>Salvia aethiops</i>	A	A
common fennel	<i>Foeniculum vulgare</i>	B	ND	milk thistle	<i>Silybum marianum</i>	A	A
common groundsel	<i>Senecio vulgaris</i>	C	ND	nightshade, bittersweet	<i>Solanum dulcamara</i>	—	WOC
common reed	<i>Phragmites australis</i>	C	C	nightshade, silverleaf	<i>Solanum elaeagnifolium</i>	A	A
common St. Johnswort	<i>Hypericum perforatum</i>	C	ND	old man's beard	<i>Clematis vitalba</i>	C	ND
common tansy	<i>Tanacetum vulgare</i>	C	ND	oxeye daisy	<i>Leucanthemum vulgare</i>	B	ND
cordgrass, common	<i>Spartina anglica</i>	B	B	parrotfeather	<i>Myriophyllum aquaticum</i>	B	B
cordgrass, dense flower	<i>Spartina densiflora</i>	A	A	perennial pepperweed	<i>Lepidium latifolium</i>	B	B
cordgrass, salt meadow	<i>Spartina patens</i>	A	A	perennial sowthistle	<i>Sonchus arvensis</i>	B	B
cordgrass, smooth	<i>Spartina alterniflora</i>	B	B	poison-hemlock	<i>Conium maculatum</i>	C	ND
cress, hoary	<i>Cardaria draba</i>	C	—	policeman's helmet	<i>Impatiens glandulifera</i>	B	B
curly-leaf pondweed	<i>Potamogeton crispus</i>	C	ND	primrose, water	<i>Ludwigia hexapetala</i>	B	B
dodder, smoothseed alfalfa	<i>Cuscuta approximata</i>	C	—	primrose-willow, floating	<i>Ludwigia peploides</i>	A	A
dyers woad	<i>Isatis tinctoria</i>	A	A	puncturevine	<i>Tribulus terrestris</i>	B	—
English holly	<i>Ilex aquifolium</i>	—	WOC	reed canarygrass	<i>Phalaris arundinacea</i>	C	ND
English laurel	<i>Prunus laurocerasus</i>	—	WOC	reed sweetgrass	<i>Glyceria maxima</i>	A	A
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	B	ND	rush skeletonweed	<i>Chondrilla juncea</i>	B	B
fanwort	<i>Cabomba caroliniana</i>	B	B	Russian knapweed	<i>Acroptilon repens</i>	B	B
field bindweed	<i>Convolvulus arvensis</i>	C	ND	rye, cereal	<i>Secale cereale</i>	C	—
fragrant water lily	<i>Nymphaea odorata</i>	C	ND	saltcedar	<i>Tamarix ramosissima</i>	B	B
garlic mustard	<i>Alliaria petiolata</i>	A	A	Scotch broom	<i>Cytisus scoparius</i>	B	ND
giant hogweed	<i>Heracleum mantegazzianum</i>	A	A	Spanish broom	<i>Spartium junceum</i>	A	A
goatgrass, jointed	<i>Aegilops cylindrica</i>	C	—	spikeweed	<i>Hemizonia pungens</i>	C	—
goatsrue	<i>Galega officinalis</i>	A	A	spurge flax	<i>Thymelaea passerina</i>	A	A
gorse	<i>Ulex europaeus</i>	B	B	spurge laurel	<i>Daphne laureola</i>	B	ND
grass-leaved arrowhead	<i>Sagittaria graminea</i>	B	B	spurge, eggleaf	<i>Euphorbia oblongata</i>	A	A
hairy willowherb	<i>Epilobium hirsutum</i>	C	C	spurge, leafy	<i>Euphorbia esula</i>	B	B
hawkweed, mouseear	<i>Hieracium pilosella</i>	B	B	spurge, myrtle	<i>Euphorbia myrsinites</i>	B	ND
hawkweed, orange	<i>Hieracium aurantiacum</i>	B	B	starthistle, purple	<i>Centaurea calcitrapa</i>	A	A
hawkweed, oxtongue	<i>Picris hieracioides</i>	B	B	starthistle, yellow	<i>Centaurea solstitialis</i>	B	B
hawkweed, polar	<i>Hieracium atratum</i>	B	B	sulfur cinquefoil	<i>Potentilla recta</i>	B	B
hawkweed, queen-devil	<i>Hieracium glomeratum</i>	B	B	swainsonpea	<i>Sphaerophysa salsula</i>	B	B
hawkweed, smooth	<i>Hieracium laevigatum</i>	B	B	Syrian bean-caper	<i>Zygophyllum faba</i>	A	A
hawkweed, yellow	<i>Hieracium caespitosum</i>	B	B	tansy ragwort	<i>Senecio jacobaea</i>	B	B
hawkweed, yellow devil	<i>Hieracium floribundum</i>	A	A	Texas blueweed	<i>Helianthus ciliaris</i>	A	A
Hedge Bindweed	<i>Calystegia sepium</i>	—	WOC	thistle, bull	<i>Cirsium vulgare</i>	C	ND
hedgeparisley	<i>Torilis arvensis</i>	B	B	thistle, Canada	<i>Cirsium arvense</i>	C	ND
henbane, black	<i>Hyocyamus niger</i>	C	—	thistle, Italian	<i>Carduus pycnocephalus</i>	A	A
herb Robert	<i>Geranium robertianum</i>	B	ND	thistle, musk	<i>Carduus nutans</i>	B	B
hoary alyssum	<i>Berteroa incana</i>	B	B	thistle, plumeless	<i>Carduus acanthoides</i>	B	B
houndstongue	<i>Cynoglossum officinale</i>	B	—	thistle, Scotch	<i>Onopordum acanthium</i>	B	B
hydrilla	<i>Hydrilla verticillata</i>	A	A	thistle, slenderflower	<i>Carduus tenuiflorus</i>	A	A
indigobush	<i>Amorpha fruticosa</i>	B	—	toadflax, Dalmatian	<i>Linaria dalmatica ssp. dalmatica</i>	B	B
ivy, Atlantic	<i>Hedera hibernica</i>	C	ND	toadflax, yellow	<i>Linaria vulgaris</i>	C	ND
ivy, English	<i>Hedera helix</i> Baltica	C	ND	velvetleaf	<i>Abutilon theophrasti</i>	A	A
ivy, English	<i>Hedera helix</i> Pittsburgh	C	ND	white bryony	<i>Bryonia alba</i>	B	B
ivy, English	<i>Hedera helix</i> Star	C	ND	whiteweed, hairy	<i>Cardaria pubescens</i>	C	—
johnsongrass	<i>Sorghum halepense</i>	A	A	wild carrot	<i>Daucus carota</i>	B	ND
knapweed, bighead	<i>Centaurea macrocephala</i>	A	A	wild chervil	<i>Anthriscus sylvestris</i>	B	B
knapweed, black	<i>Centaurea nigra</i>	B	B	wild four o'clock	<i>Mirabilis nyctaginea</i>	A	—
knapweed, brown	<i>Centaurea jacea</i>	B	B	yellow archangel	<i>Lamium galeobdolon</i>	—	ND
knapweed, diffuse	<i>Centaurea diffusa</i>	B	B	yellow flag iris	<i>Iris pseudacorus</i>	C	ND
knapweed, meadow	<i>Centaurea jacea x nigra</i>	B	B	yellow floating heart	<i>Nymphoides peltata</i>	B	B
				yellow nutsedge	<i>Cyperus esculentus</i>	B	B

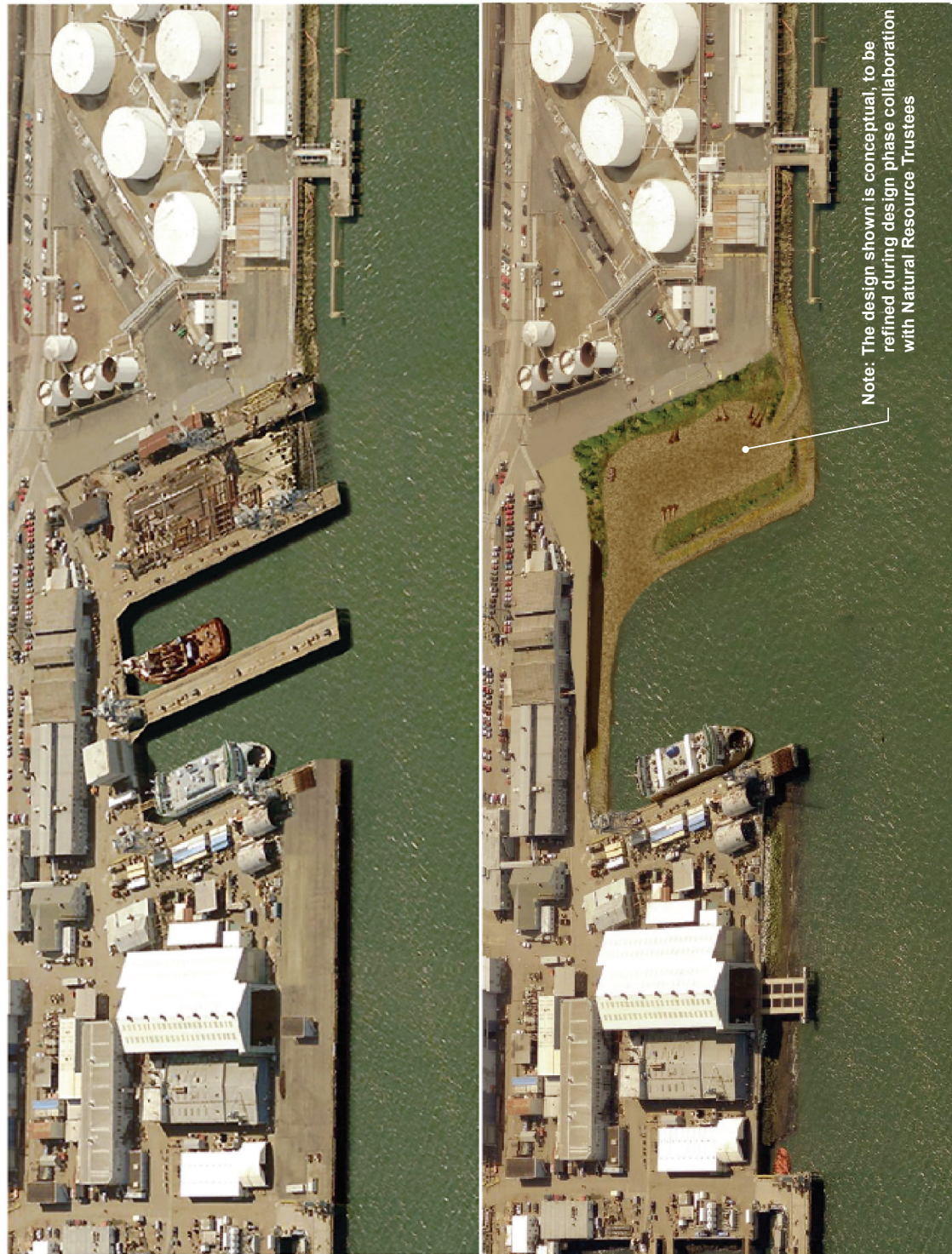
1. WSNWCB, 2008. A = Class A Noxious Weed C = Class Noxious Weed WOC = Weed of Concern  
2. King County, 2007. B = Class B Noxious Weed ND = Non-Designated Noxious Weed — = Not on list

**TABLE 4**  
**REQUIRED DELIVERABLES AND IMPLEMENTATION STEPS**Vigor Shipyards Habitat Projects  
Seattle, Washington

<b>Deliverables and Implementation Steps</b>	<b>Completion Schedule</b>
Effective Date of the Consent Decree (CD)	
Submit Draft Sampling and Analysis Plan (SAP) for Pre-Design Investigation to Trustees and USEPA for Review	Within 60 Days of Effective Date of CD
Conduct Pre-Design Investigation	Within 60 days of SAP Approval
Submit Conceptual Design Package to Trustees for Review	Within 180 days of Effective Date of CD
Submit Habitat Mix Gradations and Substrate Selection Package to Trustees for Review	Concurrent with Conceptual Design Package
Submit Preliminary Design Package to Trustees for Review	Within 180 days of Trustee Approval of Conceptual Design and Habitat Mix Gradations and Substrate Selection Packages
Submit JARPA Permit Application	Within 30 days of Trustee Approval of Preliminary Design Package
Submit Remedial Action Work Plan (RAWP) to USEPA for Review	Within 60 days of Submitting the Preliminary Design Package to Trustees for Review
Submit Final Design Package to Trustees for Review	Within 90 days of Trustee Approval of Preliminary Design Package
Submit Maintenance and Monitoring Plan to Trustees for Review	Concurrent with Final Design Package
Prepare Construction Documents	Within 90 days of Trustee Approval of Final Design Package
Engage Contractor and Implement Construction <i>(Note that in-water construction activities can only occur with permitted "fish windows." Construction is anticipated to require two in-water construction seasons).</i>	Following Trustee Approval of Final Design Package and within 60 days of Receipt of Required Permits
Submit Construction Completion Report to Trustees and USEPA for Review	Within 60 days of Completion of Construction
Implement Monitoring and Maintenance Plan and Submit Monitoring and Maintenance Reports to Trustees	Following Completion of Construction – "Year 0" Monitoring is performed within 60 days of completion of planting
Submit Monitoring Completion Report to Trustees	Within 90 days of completion of the 10-year Monitoring Period
Submit written Notice of Completion of Vegetation and Habitat Development and Monitoring Obligations to Trustees	Within 90 days of completion of the 10-year Monitoring Period
Submit Long-Term Stewardship Plan to Trustees for Review	Within 120 days of completion of the 10-year Monitoring Period

## Figures

---



Note: The design shown is conceptual, to be refined during design phase collaboration with Natural Resource Trustees

**Before**

**After**

Figure 1  
 Rendering;  
 Proposed Southwest Yard Project

**Vigor Shipyards  
 NRD Settlement**

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**VIGOR**  
 INDUSTRIAL

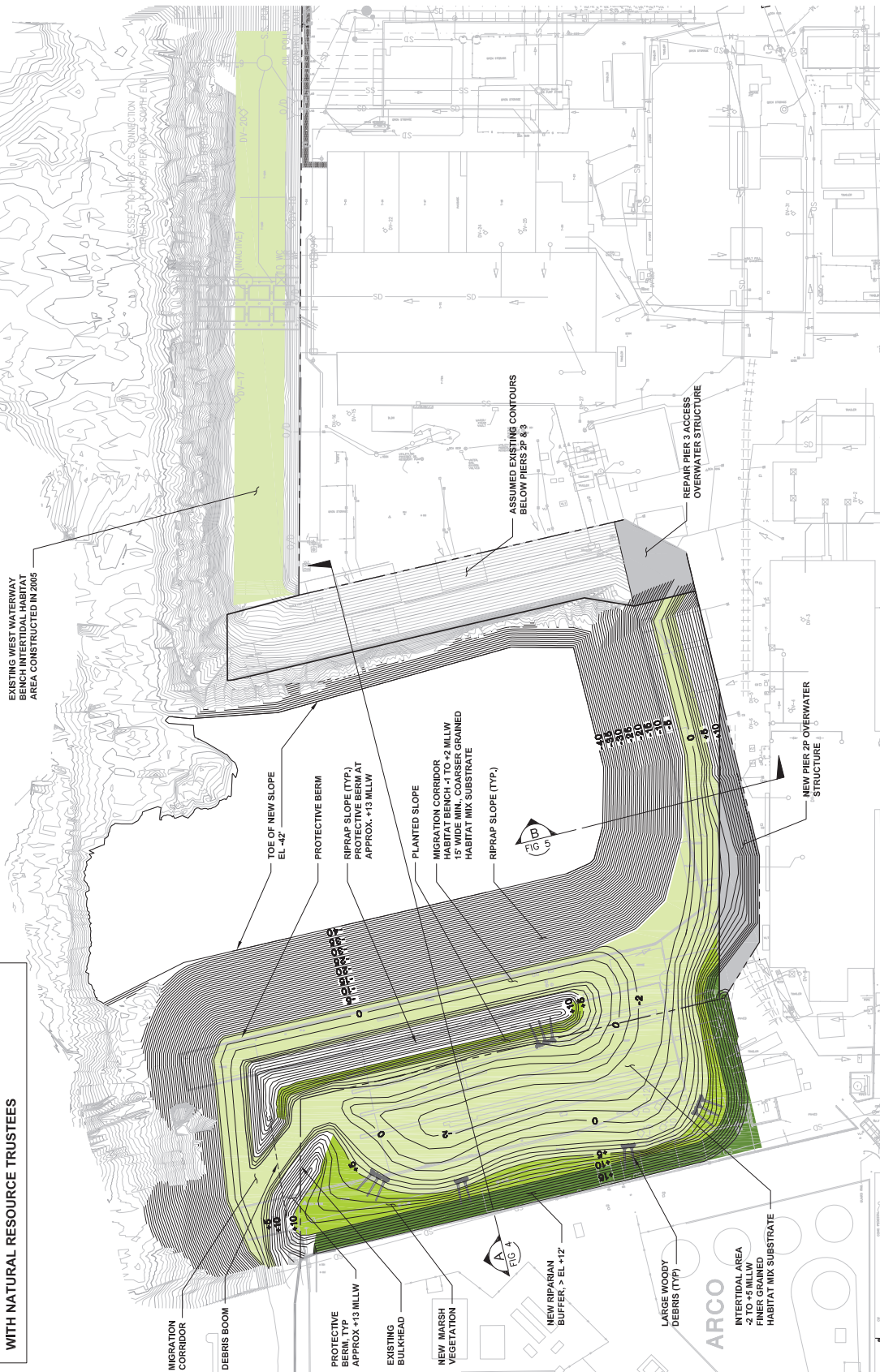
F:\Projects\1000-NPL\GIS\Task 05000\NDR\Figure 1 - Rendering Proposed SW Yard Project 20170606.mxd 3/8/2017



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NOTE: THE DESIGN SHOWN HERE IS CONCEPTUAL, TO BE REFINED DURING DESIGN PHASE IN COLLABORATION WITH NATURAL RESOURCE TRUSTEES

NOTES:  
1. ELEVATIONS SHOWN ARE IN MLLW VERTICAL DATUM.



DRAWN: JH	PROJECT NO: 111088
DESIGN: SS	SCALE: 1"=100'
CHECKED: BR	DATE: MARCH, 2017
DRAWING NO.	<b>FIGURE 2</b>
SHEET NO.	OF

NRD SETTLEMENT  
SOUTHWEST YARD  
PROPOSED DEVELOPMENT



NO.	DATE	BY	REVISION

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**kpff**  
1601 5th Avenue, Suite 1300  
Denver, CO 80202  
Tel: 303.733.0200 Fax: 303.733.0200

Case 2:21-cv-00044 Document 3-2 Filed 01/14/21 Page 95 of 98

**ZONE 3:**

OPEN-WATER RESTRICTED AREA. NO STRUCTURES OR MOORAGE ALLOWED. VESSEL ACCESS ALLOWED FOR TEMPORARY SUPPORT OPERATIONS ONLY, BETWEEN MARCH 1 AND JUNE 30 OF EACH YEAR, NON-EMERGENCY MOTORIZED VESSEL OPERATIONS RESTRICTED TO 3 HOURS MAXIMUM DURATION PER 24-HOUR PERIOD.

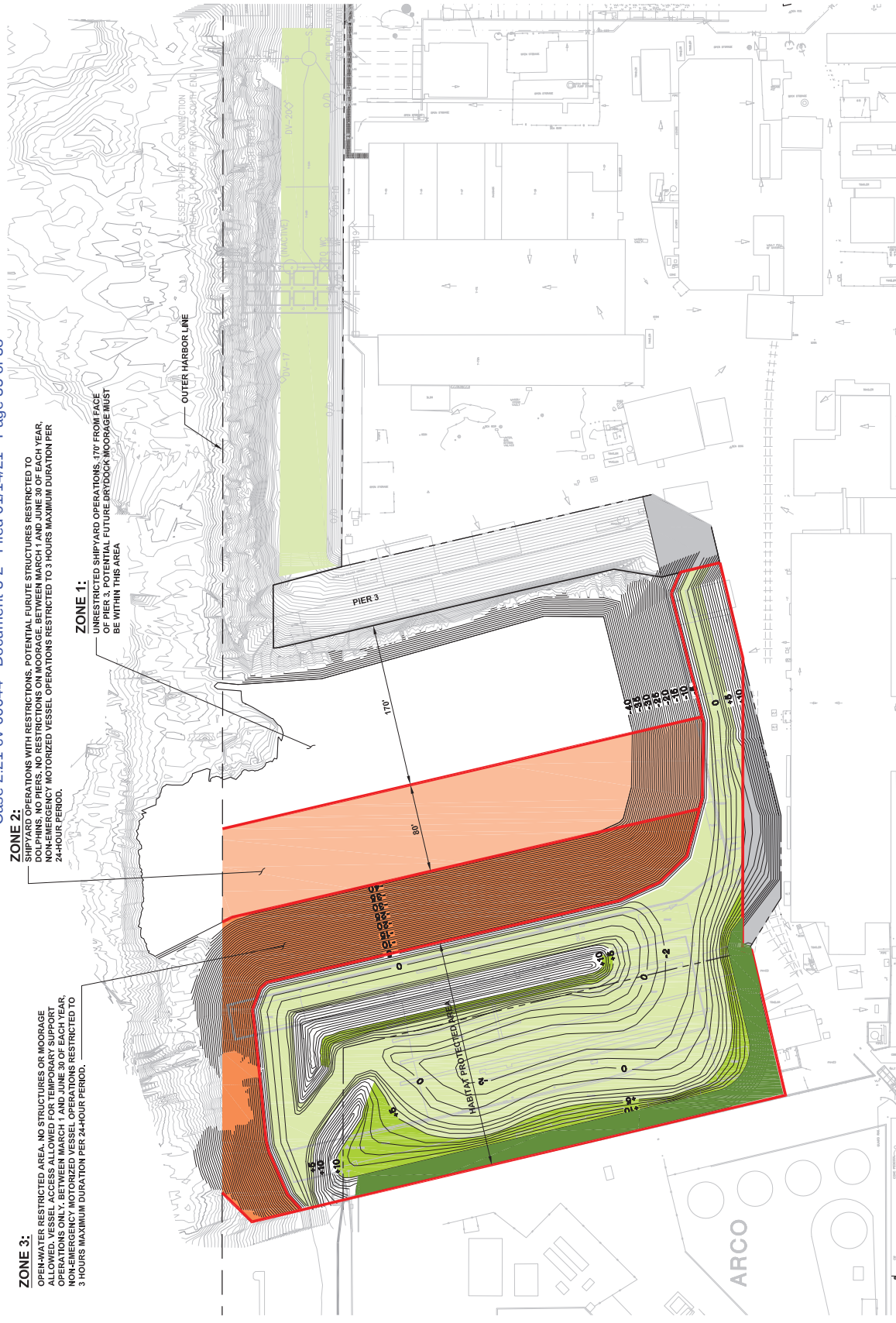
**ZONE 2:**

SHIPYARD OPERATIONS WITH RESTRICTIONS. POTENTIAL FUTURE STRUCTURES RESTRICTED TO DOLPHINS, NO PIERS, NO RESTRICTIONS ON MOORAGE, BETWEEN MARCH 1 AND JUNE 30 OF EACH YEAR, NON-EMERGENCY MOTORIZED VESSEL OPERATIONS RESTRICTED TO 3 HOURS MAXIMUM DURATION PER 24-HOUR PERIOD.

**ZONE 1:**

UNRESTRICTED SHIPYARD OPERATIONS, 170' FROM FACE OF PIER 3, PERMIT FOR FUTURE DRYDOCK MOORAGE MUST BE WITHIN THIS AREA.

**NOTES:**  
1. ELEVATIONS SHOWN ARE IN MLLW VERTICAL DATUM.



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NO.	DATE	BY	REVISION



NRD SETTLEMENT  
SOUTHWEST YARD  
OPEN WATER RESTRICTED AREAS

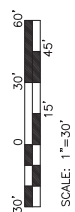
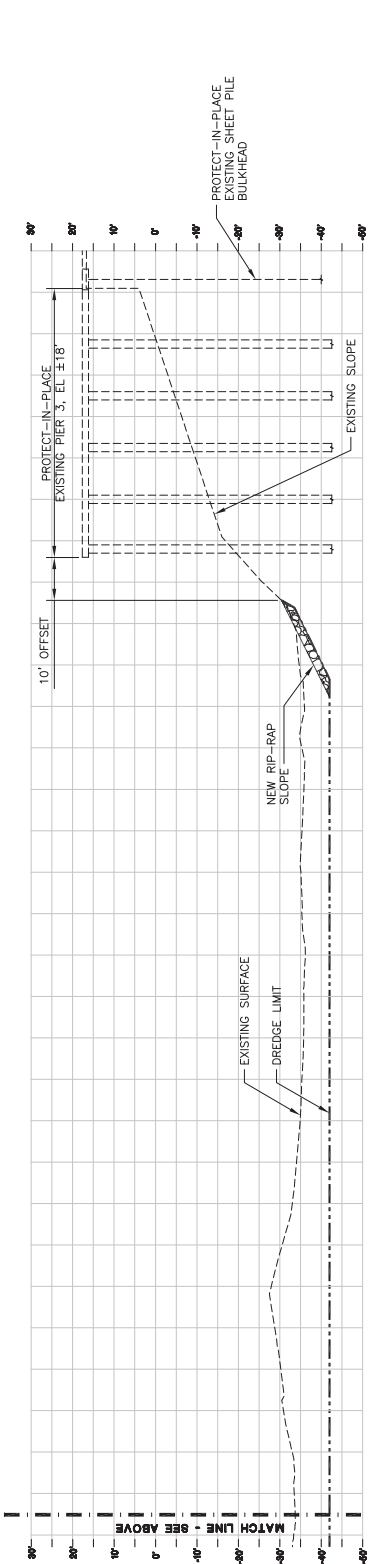
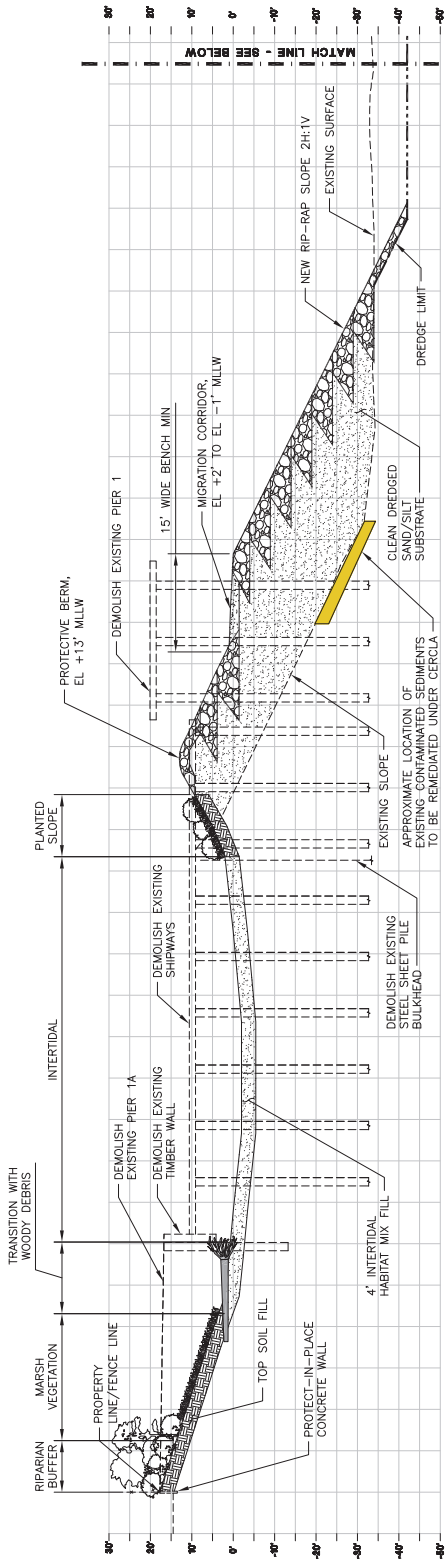
**DRAFT**

DRAWN: JH PROJECT NO: 111088  
DESIGN: SS SCALE: 1"=100'  
CHECKED: BR DATE: MARCH, 2017  
DRAWING NO: **FIGURE 3**  
SHEET NO. OF

Case 2:21-cv-00044 Document 3-2 Filed 01/14/21 Page 36 of 38

**NOTES:**

- 1. ELEVATIONS SHOWN ARE IN MLLW VERTICAL DATUM.



**SECTION A**  
SCALE: 1"=30'

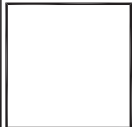
**DRAFT**

DRAWN: JH	PROJECT NO.: 111088
DESIGN: SS	SCALE:
CHECKED: BR	DATE: MARCH, 2017
DRAWING NO.	<b>FIGURE 4</b>
SHEET NO.	OF

NRD SETTLEMENT  
SOUTHWEST YARD  
SECTIONS

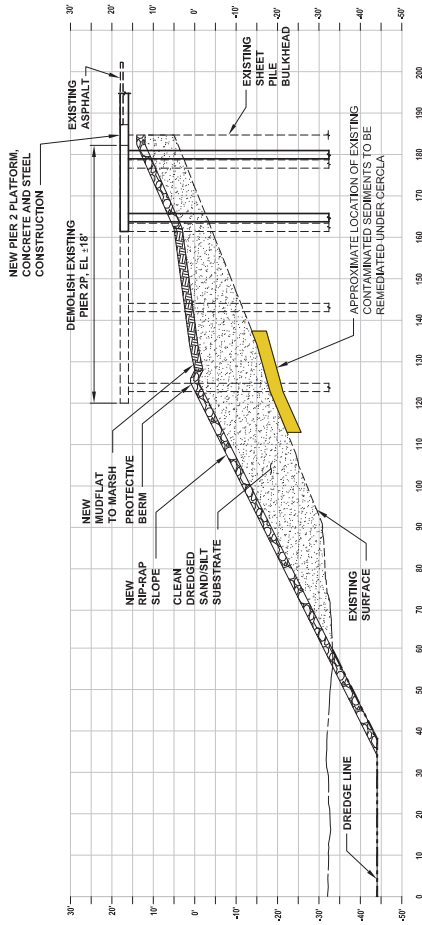


NO.	DATE	BY	REVISION



**NOTES:**

- ELEVATIONS SHOWN ARE IN HULLY VERTICAL DATUM



**SECTION B**  
SCALE: 1"=30'



**DRAFT**

DRAWN: JH	PROJECT NO.: 111088
DESIGN: SS	SCALE:
CHECKED: BR	DATE: MARCH, 2017
DRAWING NO.	<b>FIGURE 5</b>
SHEET NO.	OF

NRD SETTLEMENT  
SOUTHWEST YARD  
SECTIONS



REVISION

NO. DATE BY

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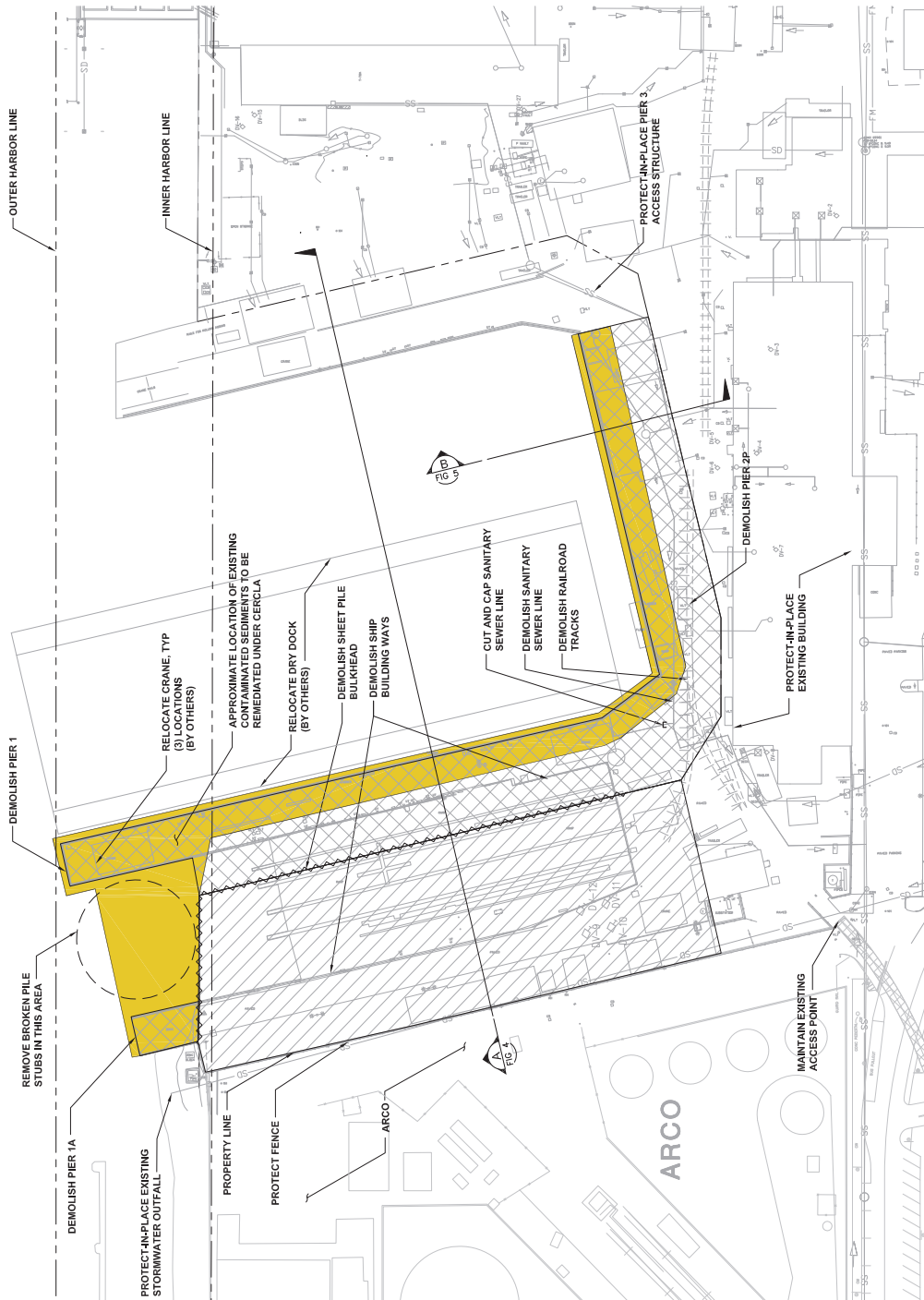
1501 5th Avenue, Suite 1300  
Denver, CO 80202  
303.733.2000 Fax: 303.733.0900

**NOTES:**

1. PRIOR TO DEMOLITION THE OWNER WILL SALVAGE AND RELOCATE ALL UTILITIES. ALL OTHER ITEMS SHALL BE REMOVED AND DISPOSED OF.
2. UTILITIES SHOWN ARE APPROXIMATE IN NATURE AND HAVE BEEN OBTAINED FROM AVAILABLE RECORD DRAWINGS. ALL UTILITIES SHALL BE CUT AND CAPPED AT THE LIMIT OF DEMOLITION.
3. ALL PILES SHALL BE REMOVED COMPLETELY.

**LEGEND:**

-  LANDSIDE STRUCTURE DEMOLITION
-  OVERWATER STRUCTURE DEMOLITION
-  APPROXIMATE LOCATION OF EXISTING CONTAMINATED SEDIMENTS TO BE REMEDIATED UNDER CERCLA



**DEMOLITION PLAN**  
SCALE: 1"=100'



**DRAFT**

DRAWN: JH	PROJECT NO: 111088
DESIGN: SS	SCALE: 1"=100'
CHECKED: BR	DATE: MARCH, 2017
DRAWING NO.	<b>FIGURE 6</b>
SHEET NO.	OF

**NRD SETTLEMENT**  
**SOUTHWEST YARD**  
**DEMOLITION PLAN**



NO.	DATE	BY	REVISION

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1501 5th Avenue, Suite 1300  
Denver, CO 80202 • Tel: (303) 555-0900

Tax Parcels

7666702850

SEATTLE TIDE LDS EXT #1 VAC FLORIDA STR LESS S 50 FT & ALL VAC 16TH AVE SW ADJ  
TGW AREA IN FRONT OF LOT 1 WEST WATER WAY LEASEHOLD NO WP 108 - 128664 SQ  
FT & TGW AREA IN FRONT OF POR OF VAC FLORIDA ST LEASE HOLD NO WP 139A - 22735  
SQ FT TGW AREA IN FRONT OF LOT 1 IN WEST WATER WAY LEASE HOLD NO WP 139B -  
64000 SQ FT (TAXABLE THRU PERSONAL PROP) AND ALSO TGW POR OF SEATTLE TIDE  
LDS REPL BLK 397 DAF - POR OF BLKS C-D-E & VAC STS ADJ - BEG ON EAST LN BLK C  
44.18 FT SOUTH OF NE COR TH S 76-42-13 W 300.00 FT TH NORTH 188.96 FT TO NORTH LN  
BLK E TH SWLY 254.89 FT TO NW COR SD BLK E TH SOUTH TO SW COR BLK D TH N 76-42-  
12 E 190.91 FT TH NORTH PLW EAST LN BLK C 327.23 FT TH N 76-42-12 E 142.00 FT TH  
SOUTH 6.85 FT TH EAST 216.63 FT TO EAST LN OF BLK C TH NORTH 466.56 FT TO BEG  
DNR LEASE #22-090036

PLat Block: 404 &

Plat Lot: POR

---

7666702851

SEATTLE TIDE LDS EXT # 1 AREA IN FRONT OF W 1/2 OF 16TH AVE SW & E OF ABOVE  
BLK-SEE MINOR # 2850 TAXABLE THRU PERSONAL PROPERTY DNR LEASE #22-A02202

PLat Block: 404

Plat Lot: POR

---

7666702852

SEATTLE TIDE LDS EXT # 1 AREA IN FRONT OF BLK 404-SEE MINOR # 2850 TAXABLE  
THRU PERSONAL PROPERTY

PLat Block: 404

Plat Lot: POR

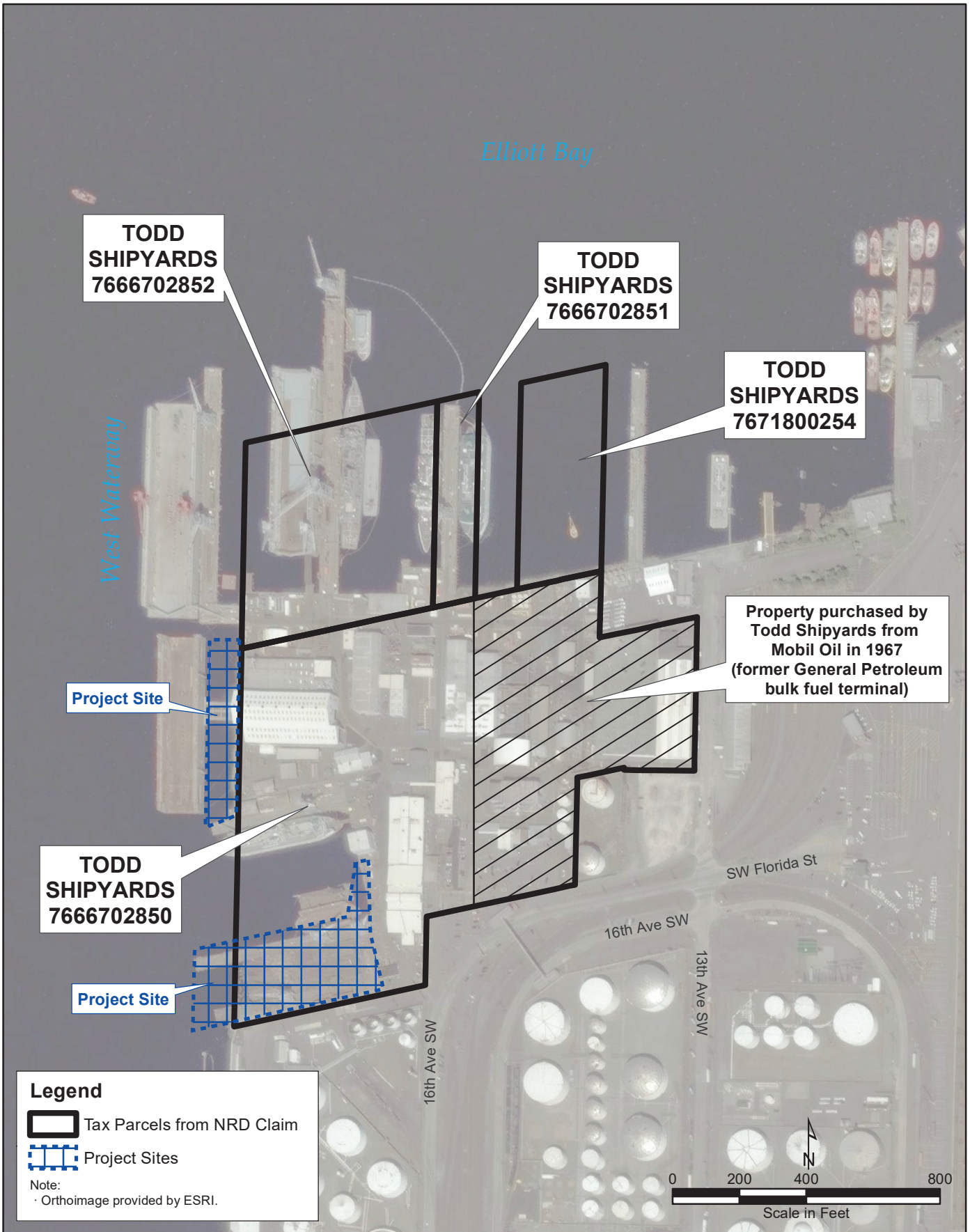
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7671800254


SEATTLE TIDE LDS REPL BLK 397 AREA IN FRONT OF LOT 2 & POR 1 - SEE #766670-2850  
TAXABLE THRU PERSONAL PROPERTY


PLat Block: E

Plat Lot: 1-2

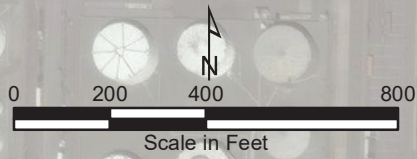


**Legend**

 Tax Parcels from NRD Claim

 Project Sites

Note:  
· Orthoimage provided by ESRI.



**Vigor Shipyards  
Harbor Island, Seattle WA  
NRD Settlement Tax Parcels and Project Sites**

APPENDIX C

ENVIRONMENTAL COVENANT AND ACCESS AGREEMENT

AFTER RECORDING  
RETURN TO:

General Counsel  
Vigor Industrial LLC  
5555 North Channel Avenue  
Portland, OR 97217

GRANTOR: Todd Shipyard Corp. (n/k/a Puget Sound Commerce Center, Inc.)  
1801 16<sup>th</sup> Avenue SW  
Seattle, Washington 98134

HOLDERS:

National Oceanic and Atmospheric Administration, on behalf of  
the Department of Commerce

Washington Department of Ecology, on behalf of the State of  
Washington

The Muckleshoot Indian Tribe

The Suquamish Tribe

LEGAL DESCRIPTION OF THE REAL PROPERTY SUBJECT TO COVENANT:

SEATTLE TIDE LDS EXT #1 VAC FLORIDA STR LESS S 50 FT & ALL VAC 16TH  
AVE SW ADJ TGW AREA IN FRONT OF LOT 1 WEST WATER WAY  
LEASEHOLD NO WP 108-128664 SQ FT & TGW AREA IN FRONT OF POR OF  
VAC FLORIDA ST LEASE HOLD NO WP 139A - 22735 SQ FT TGW AREA IN  
FRONT OF LOT 1 IN WEST WATER WAY LEASE HOLD NO WP 139B - 64000 SQ  
FT (TAXABLE THRU PERSONAL PROP) AND ALSO TGW POR OF SEATTLE  
TIDE LDS REPL BLK 397 DAF - POR OF BLKS C-D-E & VAC STS ADJ - BEG ON  
EAST LN BLK C 44.18 FT SOUTH OF NE COR TH S 76-42-13 W 300.00 FT TH  
NORTH 188.96 FT TO NORTH LN BLK E TH SWLY 254.89 FT TO NW COR SD  
BLK E TH SOUTH TO SW COR BLK D TH N 76-42-12 E 190.91 FT TH NORTH  
PLW EAST LN BLK C 327.23 FT TH N 76-42-12 E 142.00 FT TH SOUTH 6.85 FT TH  
EAST 216.63 FT TO EAST LN OF BLK C TH NORTH 466.56 FT TO BEG DNR  
LEASE #22-090036  
PL at Block: 404 &  
Plat Lot: POR

TAX PARCEL(S): 766670-2850



## I. Purpose and Background

This Environmental Covenant and Access Agreement ("Covenant and Agreement") is made and entered into by (a) the National Oceanic and Atmospheric Administration ("NOAA"), through the Department of Commerce; the Washington Department of Ecology, on behalf of the state of Washington; the Muckleshoot Indian Tribe; and the Suquamish Tribe (collectively, "Holders"); who are also members of the Elliot Bay Trustee Council which is comprised of NOAA; the United States Department of the Interior; the Washington Department of Ecology, on behalf of the state of Washington; the Muckleshoot Indian Tribe; and the Suquamish Tribe (collectively, the "Trustees"); and (b) Todd Shipyard Corp. (n/k/a Puget Sound Commerce Center, Inc.) ("Grantor" or "Owner") (and together with the Holders, "the Parties" and individually as a "Party").

The Trustees, under the authority of Section 107(f) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9607(f); Section 1006(b) of the Oil Pollution Act of 1990 ("OPA"), 33 U.S.C. 2706(b); and, 40 C.F.R. Part 300, subpart G, assess and recover damages for injury to, destruction of, or loss of natural resources and natural resource services under their trusteeship located in or proximate to the Lower Duwamish River, including the Lower Duwamish Waterway Site, Harbor Island Site and the Lockheed West Site (hereinafter all three will be referred to as "LDR").

The Lower Duwamish Waterway, Harbor Island, and the Lockheed West Sites are listed on the National Priorities List as federal Superfund sites, pursuant to Section 105 of CERCLA, 42 U.S.C. § 9601 *et seq.* and as amended. Harbor Island and its associated waterways are immediately downstream from the Lower Duwamish Waterway. The Trustees have carried out

and/or are carrying out damage assessment activities for the LDR and anticipate bringing claims for injuries to natural resources.

The Grantor owns the property described, above, located on Harbor Island and in or proximate to the LDR in Seattle, Washington (hereinafter referred to as the "Property").

Vigor Industrial, LLC, the parent of Grantor, and Exxon Mobil Corporation have entered into a Consent Decree with the Trustees with respect to the Property. The Consent Decree requires Vigor Industrial, LLC and Exxon Mobil Corporation to perform certain restoration projects ("Projects" as described on Attachment A) on a portion of the Property ("Project Sites" as depicted on Attachment B) and to dedicate these Project Sites as habitat to be maintained in perpetuity.

## **II. Conveyance and Covenants**

Grantor, Todd Shipyard Corp. (n/k/a Puget Sound Commerce Center, Inc.), hereby binds Grantor, its successors and assigns to the land use restrictions and conditions and such other rights conveyed in this Covenant and Agreement concerning the Property owned by the Grantor and legally described above. This instrument grants a valid and enforceable environmental covenant pursuant to the Washington State Uniform Environmental Covenant Act, RCW Chapter 64.70, *et seq.*, imposing certain conditions and restrictions on the Property. Grantor conveys to the Holders full rights provided by RCW Chapter 64.70 to enforce the restrictions, conditions, or other rights set forth herein.

Grantor certifies to the Holders and their successors and assigns that Grantor owns the Property in fee simple and has the exclusive right to convey the Property or any interest therein.

Grantor makes the following covenants as to restrictions, conditions and other rights concerning the Project Sites and specifies that such covenants shall run with the land, as

provided by law, shall be perpetual, and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Project Sites:

1. The Project Sites are designated to be used for the Projects, as set forth in Attachment A (and in any amendments to Attachment A approved by the Trustees pursuant to the Consent Decree). Any authorized uses of the Project Sites shall be consistent with the function, purpose and requirements of the Projects.
2. The following activities are strictly prohibited: any activity that interferes with, damages or disturbs the integrity or maintenance of the Projects; any activity that would degrade or diminish the ecological values of the habitat or its function as a habitat; any activity that causes the release or exposure to the environment of any hazardous substances at the Projects; or any activity that would otherwise interfere with the Projects such that it would adversely affect the likelihood of success of the Projects located on the Property.
3. The Grantor must restrict leases to uses and activities consistent with this Covenant and Agreement, notify all lessees and easement grantees of the restrictions on the use of the Project Sites, and make compliance with the restrictions in this Covenant and Agreement a condition of that lease or easement.
4. No major maintenance or construction project shall be permitted on the Project Sites without prior written notice to the Holders.
5. The Grantor shall allow authorized representatives of the Holders the right to enter the Project Sites at reasonable times to undertake the following activities:

a. Evaluation or inspection of the Projects, including but not limited to monitoring and assessing progress on the construction, operation, maintenance and performance of the Projects. Such evaluation or inspection may involve the taking of photographs or video.;

b. Verification of any data or information submitted to the Holders;

c. Inspection and duplication of records, operation logs, contracts or other documents maintained or generated by the Grantor or its contractors hereafter retained to perform work undertaken pursuant to the Projects; and

d. Conducting such tests, investigations or sample collections as deemed necessary to monitor compliance with the Projects, investigate or assess contamination at or near the Project Sites, or to assist in further identifying and quantifying natural resource injuries requiring restoration actions and in planning and carrying out further restoration actions. Such access includes reasonable access to adjacent properties owned and/or controlled by the Grantor where access may be necessary to effectuate the rights to access the Project Sites, unless access to adjacent properties will create undue risk of physical injury or harm and/or will interfere with operations on the adjacent properties.

e. Holders shall provide 72-hour notice of the Holders' intent to access the Project Sites. Subject to Grantor's health and safety requirements, and accompanied by a Grantor representative, and the execution of a confidentiality agreement in form and substances reasonably satisfactory to both parties,

representatives of Holders have authority to enter such Project Sites at all reasonable times and for purposes of overseeing requirements of the Projects.

6. The Grantor shall provide sixty (60) days advance written notice to the Holders of the Owner's intent to convey or transfer its fee title interest in the Property. Such notice shall include the name and address of the proposed transferee.
7. The Grantor must notify all Property purchasers of the restrictions, conditions and other rights set forth in this Covenant and Agreement, and make compliance with the Covenant and Agreement a condition of any conveyance of title.

### **III. Reservation of Rights**

Grantor hereby reserves unto itself, its representatives, heirs, assigns, and successors all rights accruing from ownership of the Property that are not conditioned, restricted or prohibited by Section II.

### **IV. Enforcement**

Compliance with this Covenant and Agreement may be enforced pursuant to the Washington State Uniform Environmental Covenant Act. The Holders, acting on behalf of all Trustees, shall have full enforcement rights. Failure by the Holders to enforce compliance with this Covenant and Agreement in a timely manner shall not be deemed a waiver of their rights to take subsequent enforcement actions.

### **V. Recordation**

Grantor shall record this instrument in the official records of King County, Washington and shall pay the costs associated with recording.

## VI. Termination and Modification

This Covenant and Agreement may only be amended or terminated in accordance with the amendment and termination provisions of the Washington State Uniform Environmental Covenant Act, RCW 64.70.100. Pursuant to Section 64.70.100, the Parties reserve the right to revise the Projects as described in Attachment A. In the event that the Projects are significantly altered, revised or otherwise changed, the Grantor will record a description of the modified Projects along with an amended Covenant and Agreement.

## VII. Miscellaneous

1. Covenant Limitations. This Covenant and Agreement shall not be used as evidence of the Grantor's alleged liability in any action or proceeding other than an action or proceeding to enforce the terms of this Covenant and Agreement.
2. Failure to Comply with this Covenant and Agreement. If the Grantor fails to comply with any of the terms and conditions of this Covenant and Agreement, the Holders have the right to enforce the terms of this covenant pursuant to the Washington State Uniform Environmental Covenant Act, RCW 64.70, *et seq.* to enforce the terms of this covenant.
3. No Third Party Beneficiaries. There are no third party beneficiaries of this Covenant and Agreement.
4. Notices. Whenever notice is required to be given or a document is required to be sent by one Party to another under the terms of this Covenant and Agreement, it will be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties writing.

Written notice as specified constitutes complete satisfaction of any written notice requirement of the Covenant and Agreement for the Parties:

As to the Holders:

National Oceanic and Atmospheric Administration  
Attn.: Marla Steinhoff  
7600 Sand Point Way NE  
Seattle, WA 98115

As to Grantor Todd Shipyards Corp. (n/k/a Puget Sound Commerce Center, Inc.):

General Counsel  
Vigor Industrial LLC  
5555 North Channel Avenue  
Portland, OR 97217

5. Entire Covenant and Agreement. This Covenant and Agreement, inclusive of all Attachments, contains the entire agreement between the Parties as to the subject matter hereof and supersedes all other agreements, whether written or oral, with respect to that subject matter.
6. Limitation. Nothing in this Covenant and Agreement shall be construed as obligating the United States, the state of Washington, the Tribes or any other of their officers, agents or employees to expend any funds in excess of appropriations authorized by law.

**VIII. Agreement By Grantor to Add Restrictive Covenants, Conservation Easements, or Other Restrictions or Conditions On Use or Development Upon Request**

If the Holders, on behalf of the Trustees, determine that the Project Sites covered by this Agreement require protections in addition to those afforded under this Covenant and Agreement by the Washington State Uniform Environmental Covenant Act, then the Grantor shall

implement such protections requested by the Holders, so long as the scope of those protections are reasonable and the Grantor has legal authority to implement such additional protections.

**IX. Signature and Acknowledgements**

Grantor covenants that it is authorized to grant this Covenant and Agreement and shall warrant and defend the same against all claims and demands challenging such authority. The undersigned parties represent and certify that they are authorized to execute this Covenant and Agreement.

IN WITNESS WHEREOF, Puget Sound Commerce Center, Inc. has executed this Covenant and Agreement on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

PUGET SOUND COMMERCE CENTER, INC.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed name

\_\_\_\_\_  
Title



## **Attachment A**

---

## **Scope of Work**

Vigor Shipyards Habitat Projects

Seattle, Washington

---

July 2020

*Final*

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**ACRONYMS AND ABBREVIATIONS**

<b>Acronym/ Abbreviation</b>	<b>Definition</b>
Boeing	The Boeing Company
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
City	City of Seattle
DNR	Washington State Department of Natural Resources
MLLW	Mean Lower Low Water
NOAA	National Oceanic and Atmospheric Administration
NRD	Natural Resource Damages
OMMP	Operations, Monitoring, and Maintenance Plan
Performing Parties	Vigor Industrial, LLC and ExxonMobil Corporation
SCO	Sediment Cleanup Objective
SMS	Sediment Management Standards
SOW	Scope of work
SW Yard Project	Southwest Yard Habitat Project

FINAL

Vigor Shipyards Habitat Projects

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<b>Acronym/ Abbreviation</b>	<b>Definition</b>
Trustees	Natural Resource Trustees
TSSOU	Todd Shipyards Sediment Operable Unit
USEPA	U.S. Environmental Protection Agency
Vigor	Vigor Shipyards Corporation
WW Bench	West Waterway Habitat Bench

## **SCOPE OF WORK**

### **Vigor Shipyards Habitat Projects**

### **Seattle, Washington**

#### **1.0 INTRODUCTION**

This document is Appendix A to the Consent Decree, incorporating the settlement of Natural Resources Damages (NRD) associated with the Vigor Shipyards Corporation (Vigor) property (hereafter referred to as the Property). The Property is located adjacent to the West Waterway of the Lower Duwamish River within the Harbor Island Superfund Site (Tax Parcels 7666702805, 7666702851, 7666702852, and 7671800254). The sediment remedial action area associated with the Property is identified as the Todd Shipyards Sediment Operable Unit (TSSOU). This document describes the scope of the work required to comply with the terms of the NRD settlement. In accordance with the Consent Decree, implementation of the Scope of Work (SOW) is the joint responsibility of Vigor Industrial, LLC and ExxonMobil Corporation (the Performing Parties).

Due to the industrialization of the Lower Duwamish River, off-channel habitats used by juvenile salmonids, birds, and other estuarine species have been largely eliminated, which results in limited spring/summer off-channel rearing habitat and limited high-flow refuge. Riparian functions have also been greatly reduced by diking and stream bank development, which results in reduced shading and input of leaf litter and insects. Off-channel and riparian habitats have been identified as limited factors for Green River anadromous salmonid populations. The Vigor NRD settlement has been designed to increase the area and functions value of habitat for salmonids and other resource species.

The type of off-channel habitat to be constructed is considered to be highly desirable by both the National Oceanic and Atmospheric Administration's (NOAA's) Lower Duwamish River Restoration Plan (NOAA 2013) and the Duwamish Blueprint prepared for the Water Restriction Inventory Area 9 Watershed Ecosystem Forum (Ostergaard et al., 2014). As a whole, the West Waterway habitat serves an important function for salmonid species, acting as a migration corridor and final refuge between up-river spawning habitats and the relatively unprotected Elliott Bay estuary, and at an important location relative to equilibration from fresh to salt water.

Along this reach there is only a limited amount of existing habitat, including the intertidal bench in the TSSOU constructed as part of this NRD settlement (the West Waterway Habitat Bench [WW Bench], described below) and Lockheed Yard 1 (Port of Seattle Terminal 10) located on the southwest shore of Harbor Island. These small habitat areas are disproportionately significant as refuge places and are particularly valuable because of the overall habitat scarcity within this reach. Because of their scarcity, these habitats serve as a limiting factor on the overall health of salmonids in the Lower Duwamish River environment. These intertidal habitats constructed within the last 10 years serve as a food source for salmonids and are valuable refuge and rearing areas. However, the WW Bench and habitat associated with Lockheed Yard 1 are approximately 2,000 feet apart. The proposed off-channel habitat (hereafter referred to as the Southwest Yard Habitat Project [SW Yard Project]) will be located between the two intertidal habitat areas, thus shortening the time it will take salmonids to travel between the higher quality habitat areas. The off-channel

habitat will provide important habitat diversity, be unique within this industrialized reach, and support important ecosystem processes.

This document describes the scope of the work required to comply with the terms of the NRD settlement, which includes two habitat projects:

1. WW Bench:<sup>1</sup> the permanent removal of overwater coverage, creosote-treated piling removal, and the intertidal restoration project completed in 2006; and
2. SW Yard Project: implementation of additional removal of overwater coverage and creosote-treated piling, and construction of additional estuarine habitat, including conversion of upland dry lands to aquatic habitat.

Between the two projects, the following elements have been or will be implemented by the Performing Parties:

- Creation of approximately 0.29 acres of riparian buffer between +18 and +12 feet Mean Lower Low Water (MLLW).
- Creation of approximately 0.35 acres of off-channel habitat with marsh vegetation between +5 and +12 feet MLLW.
- Creation of approximately 3.14 acres of intertidal habitat between -2 and +5 feet MLLW.
- Removal of approximately 2.74 acres of overwater coverage.
- Conversion of approximately 1.48 acres of uplands to habitat area.
- Removal of approximately 5,770 creosote-treated pilings.
- At the time of construction, as a one-time pilot, voids within riprap armored slope above elevation -10 feet MLLW will be filled with habitat mix.<sup>2</sup> This is to be conducted over approximately 3 acres and is not intended to be replenished if erosional forces cause the habitat mix to move downslope.

Quantification of the habitat restoration elements for both the WW Bench and the proposed SW Yard Project is presented in Table 1. This table clarifies which elements have already been constructed and which actions will be undertaken as requirements under the NRD Settlement CD.

An Operations, Monitoring, and Maintenance Plan (OMMP) for the TSSOU was approved by the U.S. Environmental Protection Agency (USEPA) in 2007 (Floyd|Snider 2007) as part of the TSSOU sediment cleanup. The OMMP describes the design of the WW Bench and the long-term physical monitoring of the WW Bench that was implemented annually between 2007 and 2011 in

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<sup>1</sup> In the Todd Shipyards Sediment Operable Unit Draft Final Design Report, April 20, 2003, the EPA cleanup requirements were described in detail. Also stated was Todd's intent to construct additional habitat improvements for the purpose of future NRDA credit (page 5-33). The Trustees accepted this documentation as a clear delineation of what was required by EPA as part of the cleanup versus what was above and beyond to avoid any double counting issues related to accepting additional habitat improvements for NRDA as part of this settlement.

<sup>2</sup> "Habitat mix" in this document refers to clean, naturally occurring round or sub-angular river sand and gravel. Requirements for habitat mix grain size distribution for different locations on the project will be determined during design in collaboration with the Trustees. Habitat mix will be selected to be the smallest grain size appropriate to the specific area wave climate that will support habitat use without jeopardy of rapidly eroding away.

accordance with the OMMP. The required physical monitoring includes visual monitoring surveys by divers of the substrate surface (habitat mix) along several transects of the WW Bench.

During the 2011 monitoring event (Year 4), video footage along with diver observations confirmed that the habitat mix remains in place and there are no areas of significant erosion of the habitat mix along these transects. The area is well colonized by marine life and algae, which will continue to assist with material stability over time. An observation of the WW Bench was performed by the Natural Resource Trustees (Trustees) in September 2015, which additionally confirmed that the bench is providing habitat for small fish, is colonized by marine algae, and is generally performing as intended. The most recent survey was the Year 9 physical integrity monitoring survey in the fall of 2016, which continued to show that the cap material was stable. As of 2016, long-term monitoring of the capped areas under the OMMP is considered complete, and no further routine monitoring is required.

Additional monitoring of the WW Bench to be conducted under this SOW is described in Section 6.0 and Table 2A.

The following issues are addressed in this SOW:

- The proposed concept for the SW Yard Project
- The process that will be used to refine the design of the SW Yard Project
- The site-specific investigations that will be undertaken as part of the design process for the SW Yard Project
- The maintenance and monitoring program that will be implemented to ensure that the objectives of the restoration are met
- The success criteria and monitoring methods and frequency that will be used for the project, both at the SW Yard Project and the WW Bench

## **2.0 SOUTHWEST YARD HABITAT PROJECT DESCRIPTION**

The proposed SW Yard Project is designed to maximize the value of habitat by: optimizing the area and quality of off-channel habitat of intertidal area and marsh vegetation; optimizing the riparian buffer; constructing a perimeter berm to protect the off-channel habitat from West Waterway wave action, while constructing multiple openings to the off-channel habitat area to encourage fish passage; and restricting uses within the open water area directly north of the constructed off-channel habitat.

### **2.1 SOUTHWEST YARD HABITAT PROJECT**

The construction elements of the proposed SW Yard Project are shown in Figures 1 through 6. For construction of the proposed SW Yard Project, the existing Pier 1, Ship Building Ways, Pier 1A, and Pier 2P will be demolished, and associated creosote-treated pilings removed. A small portion of Pier 2P will be rebuilt, as it is necessary for shipyard access.



Final sediment cleanup will be conducted below the demolished structures in accordance with Vigor's Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Consent Decree, Civil Action No. CV03-1179 with the USEPA.

The proposed new habitat area will prioritize intertidal habitat area, fringed by marsh vegetation and a vegetated riparian buffer. The off-channel habitat area will be designed to encourage fish passage from the West Waterway channel into the habitat area and will also have an opening for fish passage to the northeast. An initial conceptual design for the proposed habitat area is shown in Figures 1-6. The design will be further refined during the design process undertaken per this SOW, as defined in Section 3.0. The design process will determine the final combination of intertidal area and marsh vegetation to be constructed, as well as the final configuration of the perimeter berm, channel openings, and migration channel. Construction of the proposed habitat elevations requires placement of a significant wedge of new fill to raise and expand the area. Clean material dredged from the basin between Pier 1 and Pier 3 will be used to construct the majority of the fill. Imported riprap will form the exterior surface of the fill to stabilize the steep exterior slopes and to construct the berms that protect the off-channel habitat from wave action. A protective berm will be constructed to protect the off-channel habitat from West Waterway wave action created by vessel wakes and storm fetch. A migration corridor, a minimum of 15 feet in width, will be constructed outside of the protective berm to facilitate fish migration leading into and out of the habitat area. A debris boom will be designed for installation across the West Waterway channel opening, to protect the off-channel habitat area from damage by floating debris, while minimizing impact to fish passage.

Within the off-channel habitat area, imported clean materials<sup>3</sup> will be placed, to a minimum 4-foot thickness, to support marsh vegetation, and as beneficial habitat substrates. Habitat substrates will be selected during the design process, based on review of habitat substrates in similar estuary environments (refer to Section 3.5). Clean topsoil will be placed within a riparian buffer, to be located to the south and east of the new marsh, and in zones along the protective exterior berm. Habitat mix, with grain size for specific areas determined during design, will be placed within the intertidal habitat areas, including the migration corridor to be located offshore of the protective berm. The protected interior of the off-channel habitat area will be able to support a finer-grained habitat mix. At the time of construction, voids within riprap armored slope above elevation -10 feet MLLW will be filled with habitat mix.

Habitat substrates within the vegetated marsh areas and the proposed habitat mix gradation for intertidal areas will be selected and specified with the Trustees' input and approval. The marsh and riparian buffer areas will be planted with appropriate vegetation, to be determined with the Trustees' input. The selection of appropriate vegetation will utilize findings from the habitat parameter investigation described in Section 3.5. Large woody debris will be placed to increase habitat complexity.

The Performing Parties will work with the Trustees to design the bathymetry within the off-channel habitat area to achieve an optimal layout and elevations. Additionally, the Performing

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<sup>3</sup> Sampling and analysis will be performed to assure that all imported material and all constructed habitat surfaces are confirmed clean for all constituents per the Sediment Quality Standards (SQS), also known as the Sediment Cleanup Objectives (SCO) presented in the Sediment Management Standards (SMS; Washington Administrative Code 173-204).

Parties will work with tribal representatives to locate net anchors in the SW Yard Project area at optimal locations to facilitate tribal fisheries.

## **2.2 OPEN WATER RESTRICTED USE AREAS**

Vigor will restrict activities within the open water areas north of the new habitat area, to protect the habitat area from shading and impact, and to reduce noise and vessel movement impacts to migrating salmon, while maintaining shipyard operations associated with Pier 3.

Three zones have been defined within the open water area and are shown on Figure 3. These zones are defined as follows:

1. Zone 1, within 170 feet from the face of Pier 3: Unrestricted Shipyard Operations. Potential future drydock moorage must be within this area.
2. Zone 2, between 170 feet and 250 feet from the face of Pier 3: Shipyard Operational Area, with Restrictions. Potential future structures are restricted to dolphins; no piers. There are no restrictions on moorage. Between March 1 and June 30 of each year, non-emergency motorized vessel operations are restricted to 3 hours maximum duration per 24-hour period, to minimize noise and vessel movement impacts to migrating salmon.
3. Zone 3, more than 250 feet from the face of Pier 3 (immediately north of the habitat protected area): Open Water Restricted Area. No structures or moorage allowed. Vessel access is allowed for temporary support operations only. Between March 1 and June 30 of each year, non-emergency motorized vessel operations are restricted to 3 hours maximum duration per 24-hour period, to minimize noise and vessel movement impacts to migrating salmon. Vessels will be able to access this area while moving, but they will not be allowed to anchor or moor, unless necessary for maintenance or monitoring of the habitat area. Vessels operating in this area will support vessels necessary for short positioning operations, safety, environmental protection, emergency response, or tribal fishing. Vessels in this area will include skiffs or tugs that will be involved in the process of positioning a larger vessel or drydock at Pier 3, or vessels used to support maintenance of the habitat area, deploy booms, inspect the wharf, or provide emergency response.

## **3.0 DESIGN PROCESS**

The proposed concept for the SW Yard Project is presented in Section 2.0. Approximately 2.4 acres of new intertidal, marsh, and riparian area will be created consisting of:

- 0.24 acres of riparian buffer
- Approximately 2.15 acres of off-channel habitat including intertidal area marsh vegetation and migration corridor with an agreed upon design developed with Trustees

The Trustee/Performing Parties design team will refine the SW Yard Project concepts within the identified project boundaries to maximize the habitat functions and values. The final design of the SW Yard Project will restore/create at least 90 percent of the areas identified above, or a lesser amount if otherwise approved by the Trustees.

The Performing Parties will submit design documents to the Trustees for review and approval at multiple stages of design. This process will facilitate Trustee involvement and support throughout the design process, and consistency between design and permitting. This process, and the specific design documentation required, is described in Section 7.1.

Final design of the SW Yard Project must be approved by the Trustees before the Trustees authorize the Performing Parties to begin construction.

The investigations or evaluations required to support design and construction are discussed below.

### 3.1 ENVIRONMENTAL EVALUATION

**Upland Soils.** A Pre-Design Investigation will be conducted to determine the quality of existing soil that will be exposed following demolition of the Ship Building Ways, and which will form the deeper underlying soils below the imported substrates to be placed within the marsh habitat area. It is anticipated that the pre-design investigation will be conducted utilizing Geoprobe borings, which will be installed through holes cut in the existing Ship Building Ways surface.

A Sampling and Analysis Plan (SAP) for the pre-design investigation was developed in early 2018 by the Performing Parties. The SAP was reviewed and approved by USEPA and the Trustees in July 2018. The SAP compiles existing information on soil and groundwater quality and historical use; defines the site conceptual model for contaminant transport; and, based on the conceptual model, defines the location and depth of borings, sampling frequency, and protocols. The SAP also defines analytical methods and appropriate soil quality criteria to be used in evaluation of resultant data. The results of the environmental evaluation will be utilized to determine with USEPA and the Trustees whether any soil remedial action should be conducted in conjunction with construction of the habitat project.

**Habitat Surfaces.** Sampling and analysis will be performed to assure that all imported material and all constructed habitat surfaces are confirmed clean for all constituents per the Sediment Quality Standards (SQS), also known as the Sediment Cleanup Objectives (SCO) presented in the Sediment Management Standards (SMS; Washington Administrative Code 173-204). Analytical procedures and suitability criteria will be reviewed and approved by the Trustees and USEPA as part of the final design process. Following construction completion, monitoring for potential recontamination will be performed as described in Section 6.2.

### 3.2 GEOTECHNICAL AND HYDRODYNAMIC EVALUATION

In support of the WW Bench engineering design, Coast & Harbor Engineering performed a design evaluation study (Appendix C of the OMMP; Floyd|Snider 2007). This study developed design criteria for the substrate fill and submerged riprap steep slope based on a site-specific hydrodynamic evaluation and evaluated stability of substrate fill, the proposed rock buttress fill design, and the submerged riprap slope transition to the substrate mix backfill layer. This evaluation included the assessment of the wave action and erosive forces that will be acting on the WW Bench.

The SW Yard Project will be designed utilizing the information derived for the WW Bench design, and additional geotechnical input. Specific habitat mix gradations will be selected for the different areas of the site, based on anticipated wave action and vessel wake forces. Habitat mix gradation

for each area will be reviewed and approved by the Trustees during design review. As the design process moves forward, other geotechnical considerations will be evaluated as needed.

### **3.3 STORM DRAIN AND UTILITY RECONFIGURATION EVALUATION**

Significant areas of the shipyard will be demolished to enable construction of the SW Yard Project. Prior to design, the existing utilities and storm drains in the affected area will be surveyed and evaluated. The design for structural demolition of Pier 1, Pier 1A, the Ship Building Ways, and Pier 2P will include design for decommissioning or rerouting of affected utilities. All storm drainage within the area defined as “light industrial” in the Vigor Shipyard NPDES permit, including all storm drainage within the area affected by the SW Yard Project, will be rerouted. New stormwater conveyance will be installed, and stormwater treatment will be provided, to meet Ecology’s water quality requirements. Storm drain rerouting will be designed to avoid impact to the off-channel habitat area. Preliminary plans for storm drain rerouting will be reviewed by the Trustees and Ecology’s Water Quality Program during design.

### **3.4 UNDER-PIER SEDIMENT CLEANUP**

As an integral part of the habitat construction project, final sediment cleanup will be conducted below the demolished pier structures in accordance with Vigor’s CERCLA Consent Decree, Civil Action No. CV03-1179 with the USEPA, and in accordance with lease terms between Vigor and the Washington State Department of Natural Resources (DNR). During the sediment remedial action for the TSSOU conducted in 2005, under-pier contaminated sediments in this area were covered with 1 foot of sand. The USEPA and DNR agreements with Vigor state that at such time that the pier structures are demolished, the under-pier sediments will be permanently remediated. In order to construct the proposed habitat project, Piers 1, 1A, shipways and Pier 2 Platform will be demolished. This pier demolition will make under-pier contaminated sediments accessible for permanent remediation. The approximate locations of under-pier contaminated sediments to be remediated as part of this project are shown on Figures 4, 5, and 6.

Under the direction of USEPA, per the terms of the CERCLA Consent Decree, under-pier sediments to be remediated as part of this project will be characterized, alternatives for permanent remediation will be evaluated, and a preferred approach will be agreed to and documented following CERCLA requirements. Sediment characterization will be performed as an element of the SAP described in Section 3.1. A Remedial Action Work Plan, approved by USEPA, will define the work to be performed. The remedial construction will be included in the habitat project design, with associated specifications for conducting and documenting the work.

### **3.5 HABITAT PARAMETER IDENTIFICATION**

To assist in informing the design of habitat features for the proposed SW Yard Project, a review of habitat projects and inventories that have been completed along the Lower Duwamish River will be conducted. The review of habitat projects will be conducted in consultation with the Trustees and will identify similar habitat areas in the intertidal zone and high marsh zone (-2 to +12 feet MLLW) that currently exist in the northerly reaches of the Lower Duwamish River (north of the 1<sup>st</sup> Avenue South Bridge), including the East and West Waterways. The existing or restored vegetation within these areas will be evaluated. Documents to be reviewed include the literature review and habitat survey conducted per The Boeing Company’s (Boeing’s) NRD Settlement Scope of Work (Boeing 2009) and research completed by Bluefields Holdings on

behalf of the City of Seattle (City) for several City properties along the Waterway. Results of recent monitoring of juvenile salmonid use of restoration sites in the Lower Duwamish will also be reviewed to evaluate effects of elevations on fish access and use.

To further guide the planting design and establishment of native plant communities, additional reference sites will be investigated outside the Lower Duwamish Waterway. Three locations will be selected in collaboration with the Trustees that exhibit the following characteristics:

- Estuarine intertidal marshes situated at the mouth of a river
- Marshes with established plant material thriving within the +5 to +12 feet MLLW elevation range
- Sites located in areas of Puget Sound with salinity and tidal conditions similar to Elliott Bay

This use of reference sites to inform plant material selection is necessary given the unique location of the SW Yard Project at the mouth of the river. During pre-design of the SW Yard Project, these estuary reference sites will be inventoried and assessed to provide site-specific data regarding plant species composition, elevation, structure, and function to guide the restoration design for the Vigor site. Characteristics to be inventoried at the reference sites will include:

- Position in the watershed (proximity to the mouth of a river)
- Position in Puget Sound, salinity, and tidal characteristics
- Plant community species composition, distribution, elevation, and structure with emphasis on the dominant species and successional stage
- Soils with emphasis on soil texture, the quantity/quality of the organic component, and evidence of hydric soils
- Hydrologic characteristics and key structural and topographic features such as rock substrate, wet depressions, tidal creek conditions, riparian slope and swales, etc.

Reference sites will be used during the design phase of the project only, to inform plant material and substrate selection. Reference sites will not be used for comparison during monitoring.

#### **4.0 PERMITS REQUIRED PRIOR TO CONSTRUCTION**

Permits that will be required for construction of the SW Yard Project include:

- U.S. Army Corps of Engineers: Section 10 Work in Navigable Waters
- U.S. Army Corps of Engineers: Section 404 Discharge of Dredge or Fill Material
- Washington State Department of Ecology: 401 Water Quality Certification
- Washington State Department of Fish and Wildlife: Hydraulic Approval Project
- City of Seattle: Shoreline Substantial Development
- City of Seattle: Building and Grading

In-water permits will be acquired through the Joint Aquatic Resource Permit Application (JARPA) process. The JARPA will be provided to the Trustees. A National Environmental Policy Act (NEPA) DNS will be prepared for the project. The lead agencies for the State Environmental Policy Act (SEPA) and NEPA processes will be determined prior to permitting.

In addition to the permits listed above, an Aquatic Use Authorization from DNR is applicable. A portion of the proposed habitat will be constructed on State-Owned Aquatic Lands. In 2004, Vigor and DNR negotiated a new lease for the properties. This lease anticipated construction of NRD restoration projects, and defined NRD restoration as a permitted use. DNR will review and approve plans for the work to be performed on their property.

Additionally, Vigor's Individual National Pollutant Discharge Elimination System (NPDES) Permit with the Washington State Department of Ecology will need to be amended, to include updates for the reconfigured storm drains.

## **5.0 CONSTRUCTION, INITIAL HABITAT CREATION, AND INITIAL PLANTINGS**

After receiving written authorization from the Trustees to begin construction, the Performing Parties shall construct the project according to the SW Yard Project design developed under Section 3.0 of this plan. The construction phase of the SW Yard Project will include initial development of habitat and required plantings. Habitat development and initial planting shall be implemented to achieve the success criteria described in the following section.

## **6.0 MAINTENANCE AND MONITORING**

The SW Yard Project and WW Bench areas will be protected in perpetuity through deed restrictions implemented under the Consent Decree. Both areas will be maintained and monitored to ensure that the habitat restoration projects meet Trustee objectives. This section describes the Maintenance and Monitoring Plan that will be developed to ensure successful habitat restoration projects.

The Maintenance Plan will comprise two sections:

- Initial maintenance and adaptive management during the 10-year performance monitoring period.
- Additional maintenance and monitoring that will be conducted for an additional 20 years after the initial 10-year monitoring period.
- The intention of the Performing Parties and the Trustees is that the ecological functions provided by the habitat projects be maintained in perpetuity. The provisions of the Consent Decree address long-term stewardship and require Vigor to ensure that the property will not be used in a manner inconsistent with this intent.
- The Performing Parties will develop a long-term stewardship plan to be implemented after the initial 30-year monitoring period is completed to ensure that the project continues to function as intended. The long-term stewardship plan will be submitted

for Trustee review and approval following the initial 10-year performance monitoring period.

The initial 10-year maintenance requirements will be developed to ensure that newly planted vegetation becomes established and is not out-competed by invasive species or destroyed by herbivores. The long-term maintenance component of the plan will describe the maintenance activities that will be conducted after the initial 10-year monitoring. Elements included in the maintenance plan are discussed in Section 6.1.

A Monitoring Plan will be developed and followed to determine if the goals and objectives of the SW Yard Project are being achieved. The success criteria, monitoring methods, and frequency are discussed in Section 6.2 and summarized in Tables 2A, 2B, and 2C.

The physical monitoring defined in Table 2A is applicable to the WW Bench as well as the SW Yard Project. The monitoring schedule for physical monitoring at the WW Bench will be concurrent with the SW Yard Project. Monitoring defined in Tables 2B and 2C is applicable to the SW Yard Project only.

Monitoring plans and their implementation are additional key factors in a successful restoration project. Implementation of a monitoring plan will determine if:

- Restoration objectives are being met.
- The maintenance plan is sufficient.
- Contingency measures need to be taken.
- Adaptive management strategies need to be implemented.
- Contingency measures or adaptive management strategies are successful.

## 6.1 MAINTENANCE PLAN

The Maintenance Plan will include methods, frequency, and duration for the following activities:

- **Watering.** Watering will be necessary during plant material establishment. Plantings in some areas may require permanent watering. Weather information will be reviewed to evaluate during what portions of the year watering will be necessary. Monitoring of rainfall and/or soil moisture will be used to determine the need for watering during the first 2 years after plant installation. Watering methods will be defined in the Maintenance Plan.
- **Mulching.** Mulching will occur during initial plant installation. Supplemental mulching may occur during weeding activities, as necessary.
- **Weeding.** Weeding around shrubs will be important during the summer of the first year to ensure establishment and prevent stress to the plants from competition for resources. The frequency can be gauged by necessity but should occur at least twice during the spring (ideally May and June), and then once more during the summer months (August or September). Table 3 provides a list of common weed species that will need to be removed. Weeding will be performed using simple hand tools, (e.g., rakes, hoes). Chemical treatment (herbicides) will be considered only if physical removal fails.

- **Dead Plant Removal.** Dead plant material will only be removed after scheduled monitoring to allow for the accurate assessment of planting success needed for the monitoring program. Replacement planting will be detailed under contingency measures in the monitoring plan.
- **Herbivore Control Measures.** Herbivore barriers and plant protection devices will be visually inspected for maintenance issues. Initially, control measures will be inspected at a high frequency, and immediate repairs will be made as necessary until plants are established.
- **Debris Removal.** Anthropogenic material that potentially impairs habitat functions will be removed from the sites on an as-needed basis. Debris removal is relevant to both the SW Yard Project and the WW Bench project areas.

Long-term maintenance will be conducted for 20 years after the initial 10-year period to ensure that the habitat functions of the SW Yard Project and the WW Bench are maintained. This includes maintaining vegetation and other habitat attributes, controlling invasive vegetation, removing debris, and undertaking actions to address disturbances or perturbations with a foreseeable probability of occurrence, excluding “force majeure” events as defined under the Consent Decree if the Trustees agree that a “force majeure” event makes corrective action or further maintenance impossible. The plan will include a description of activities that will be conducted to maintain the ecological function of the SW Yard and WW Bench Projects. These activities will be conducted on an as-needed basis.

## 6.2 MONITORING PLAN

The monitoring plan elements are summarized in Tables 2A, 2B, and 2C.

**Goals and Objectives.** The goal of the Vigor habitat restoration projects is to create self-sustaining habitats that will restore and enhance ecosystem processes that support the array of key species groups the Trustees believe may have been injured due to contamination in the Lower Duwamish River. The proposed SW Yard Project is intended to restore important habitat types historically present in the Lower Duwamish River and provide appropriate habitat diversity and ecological niches necessary for foraging and refuge opportunities for juvenile salmon, birds, and resident fish species.

**Success Criteria.** Success criteria will be used during the monitoring period to determine if the habitat project goals are being met. The criteria chosen are adapted from monitoring guidelines developed for the Lower Duwamish River (EBDRP 2000) and Commencement Bay (CBNRT 2000) restoration projects and other sources of monitoring guidelines. These success criteria were applied in the Boeing habitat restoration completed in 2015 as described in their SOW (Boeing 2009). The success criteria presented here are modified from those applied in the Boeing habitat restoration to apply to the Vigor habitat restoration projects. The criteria are chosen because they are standards that can be measured and for which there are contingency or adaptive management measures that can be applied during the monitoring period.

- Physical Criteria
  - Intertidal habitat area integrity



- Material stability
- Sediment/soil structure
- Tidal circulation
- Elevation and channel morphology
- Biological Criteria
  - Marsh vegetation areal coverage
  - Marsh vegetation community survival
  - Non-native or invasive species areal coverage
  - Herbivore control measures
  - Riparian vegetation areal coverage
  - Riparian vegetation community survival

All physical and biological criteria are applicable to the SW Yard Project, as the SW Yard Project off-channel habitat includes fine-grained substrates, tidal channels, marsh, and riparian vegetation. Only the physical criteria of intertidal habitat area integrity and material stability are applicable to the WW Bench.

**Monitoring Frequency.** A detailed as-built survey will be completed within 30 days after the initial planting. Monitoring will occur over a 10-year period, at the frequencies defined in Tables 2A, 2B, and 2C. Biological monitoring will be performed during the growing season after deciduous plants have flowered or leafed out.

**Contingency Measures.** Contingency measures will be developed as part of the Monitoring Plan for each success criterion in the event that a standard is not met. Contingency measures are activities designed to help meet success criteria, such as replacing (replanting) dead plant material, adding soil amendments, installing supplemental irrigation, and augmenting herbivore exclusion systems. Prior to any contingency measure being implemented, an investigation as to why the criterion was not met will be conducted. In the event that a success criterion is not met because of installation flaws or lack of routine maintenance, then contingency measures will be implemented as determined by the Trustees. If the success criterion is not met because of design flaws or mortality due to herbivory, or because routine maintenance is not sufficient, then an adaptive management approach will be used, in consultation with and as approved by the Trustees.

**Adaptive Management.** Prior to any adaptive management measures being implemented, the cause for the failure to meet a success criterion will be investigated and will be discussed with the Trustees and the proposed measures approved by the Trustees. Adaptive management measures could include, but are not limited to, changing plant species, changing plant densities, adding fertilizer, or installing additional herbivore exclusion systems.

**Monitoring Methods.** Monitoring methods are identified in Tables 2A, 2B, and 2C where practical. The Performing Parties/Trustee team will further develop the methods to be used for monitoring the physical and biological parameters identified in Tables 2A, 2B, and 2C, during the development of the Monitoring Plan. The methods will be documented as standard operating procedures in the Monitoring Plan.

### 6.2.1 Physical Monitoring

Physical monitoring will be conducted at both the SW Yard Project and the WW Bench. Physical monitoring will address intertidal habitat area integrity, material stability, tidal circulation, sediment/soil structure, and elevation/channel morphology. Specific physical monitoring success criteria, monitoring tasks, monitoring methods, schedule, and contingency measures are described in Table 2A.

### 6.2.2 Biological Monitoring

As described above, the SW Yard Project is intended to restore important habitat types historically present in the Lower Duwamish River, including tidal marsh and riparian vegetation. Elevations suitable for tidal marsh development will be planted with aquatic vascular plants within the footprint of the SW Yard Project. The goal of the marsh plantings is to establish tidal marsh communities that will provide critical habitat functions, such as feeding and refuge for anadromous salmonids and other species. The establishment of marsh vegetation is one of the primary objectives of the Trustees. Wetland vegetation is one of the most obvious and straightforward indicators of habitat condition. Vegetation provides habitat structure for aquatic and terrestrial organisms, facilitates sediment accretion and build-up of marsh substrate, and serves as a source of organic material to support detritus-based food webs.

The proposed restoration will create a large area that is suitable for intertidal habitat and tidal marsh colonization. After demolition of Pier 1A, the Ship Building Ways, Pier 1, and Pier 2P, the shoreline will be filled and appropriate elevations will be planted with marsh vegetation. Changes in vascular plant populations often lag behind environmental changes, because most species are limited in their ability to become established even when the habitat structure is appropriate. Periodic examination of the vegetation will assist in the identification of potential problems, such as colonization by invasive species or excessive herbivore damage. Useful measures of vegetation community condition include areal coverage and survival rates. Biological monitoring success criteria, monitoring tasks, monitoring methods, schedule, and contingency measures are described in Table 2B. The key elements for marsh vegetation biological monitoring are described in the following sections.

#### 6.2.2.1 *Marsh Vegetation Areal Coverage and Survival*

**Success Criteria.** Percent cover of thriving, healthy vegetation of targeted marsh vegetation species should be stable or increasing within the elevations suitable to marsh establishment, with the desired mix of species present. Objectives are 25 percent cover of targeted species at 3 years, 50 percent at 5 years, and not less than 75 percent after 10 years.

**Monitoring Tasks.** An as-planted survey will be conducted following initial planting(s) to confirm that planting(s) are installed per the design specifications. An aerial photograph of the full project area will be collected following initial planting(s) and at each monitoring event.

Post-construction, permanent transects will be placed at equal intervals traversing the marsh area north to south. The project area is controlled by Vigor and is secure with no public access. Therefore, permanently placed stakes will not be disturbed and can be used to re-establish the transects for each sampling period. The number of transects will be based on habitat area and shape to adequately define the entire project. The transects will encompass all portions of the project area

suitable for intertidal vegetation establishment. Permanent photo-points will be established along the transects, and color photographs will be collected during each monitoring event. A general walking inspection of the full marsh area will be made to identify any specific areas of concern regarding vegetative health.

Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in areal coverage of targeted marsh vegetation species, and overall vegetative community health and survival. Monitoring will be conducted in Years 0, 1, 2, 3, 5, 7, and 10.

**Contingency Measures.** Evidence of decreasing areal coverage of marsh vegetation target species should trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species, elevation, and other design factors will be reexamined and adjusted if new information suggests adjustment is appropriate.

#### **6.2.2.2 Marsh Area Invasive Species Areal Coverage**

**Success Criteria.** The project should not at any time contain more than 5 percent cover by area of non-native or invasive plant species. Invasive plant species of special concern include, but are not limited to, *Spartina* spp. (cordgrass), *Lythrum salicaria* (purple loosestrife), *Phalaris arundinacea* (reed canarygrass), and *Phragmites communis* (common reed).

**Monitoring Tasks.** Monitoring will be conducted as described above in Section 6.2.2.1. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated. Monitoring will be conducted in Years 0,<sup>4</sup> 1, 2, 3, 5, 7, and 10.

**Contingency Measures.** Any occurrence of non-native and invasive species exceeding 5 percent by vegetated area will be controlled primarily by physical means (weeding). Physical removal will occur as soon as invasive plants are identified and prior to seed set. Chemical treatment (herbicides) will only be considered if physical removal fails and will only be utilized with Trustee approval. *Spartina* spp. that is found to colonize any portion of the site (irrespective of the areal coverage) will be immediately controlled.

#### **6.2.2.3 Marsh Vegetation Herbivory Avoidance**

**Success Criteria.** Physical herbivore barriers shall successfully prevent damage to vegetation by Canada geese, until vegetation is fully established. Installation of devices must take place before or simultaneous with planting of marsh vegetation.

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<sup>4</sup> “Year 0” is defined as directly following construction completion at the SW Yard Project. This definition of Year 0 will also be used at the WW Bench, so that monitoring dates are concurrent between the two areas. Biological monitoring to be conducted in Year 0 will be conducted within 60 days of completion of planting.

**Monitoring Tasks.** Periodic, and initially frequent, visual inspections of herbivore exclusion systems and immediate repair will be performed to reduce damage until the plant root systems have established themselves.

**Schedule.** Installation of devices must take place before or simultaneous with planting of intertidal vegetation. Devices will be maintained for at least 4 years post-planting (initial planting or replanting). Periodic monitoring will be used to confirm adequate site maintenance of devices. Observations will be logged at each monitoring event for 5 years post-planting (or replanting).

**Contingency Measures.** The Performing Parties shall immediately repair any damage to the herbivore exclusion devices caused by logs, trampling, geese, or other causes. Canada geese can destroy newly planted restoration project sites in a matter of hours. There are several exclusion device designs that have proven successful in studies conducted in the Lower Duwamish River and Commencement Bay, including those based on lessons learned at the recently completed habitat restoration at Boeing.

#### **6.2.2.4 Biological Contingency Measures**

Failure to meet the success criteria indicates that a basic restoration goal is not being met and will trigger discussions and potential investigations regarding possible causes. Data from an individual monitoring period indicating that a success criteria assessment measure is not in conformance will trigger discussions on the reason that the measure is not in conformance. If contingency measures are judged by the Trustees to be necessary, the Performing Parties will propose contingency measures in consultation with the Trustees and the Performing Parties will, upon the Trustees' written approval, implement the actions during the next 12 months. If the goals are not being met at Year 5, the Performing Parties will, in consultation with the Trustees, conduct an investigation of the reasons for the non-conformance, addressing the following questions:

- Can the cause of the non-conformance be identified?
- Is it technically feasible to modify or adjust the physical, chemical, or biological feature(s) of the marsh, or regulate operation or maintenance of the marsh, such that a parameter could subsequently achieve an acceptable level of development?
- What is the projected success and cost of the proposed modification?

Results of the investigation will determine modifications that may need to be implemented by the Performing Parties, which may include, but not be limited to: replanting, changing plant species, changing plant densities, regrading limited portions of the area, adding soil amendments, and excavating drainage channels. Implementing modifications after Year 5 will require monitoring of the performance assessment measures to continue in Years 6 through 11. Data from an individual sampling year during this period indicating that a performance assessment measure is not in conformance will trigger discussions on the potential to take additional contingency measures.

If the Performing Parties are required to implement corrective actions after Year 5, and have demonstrated best effort to satisfy the performance goals through Years 1 through 5 and Years 6 through 11 (including performing immediate contingency measures as needed), then the Performing Parties will not be required to implement additional corrective actions or conduct monitoring with regard to marsh vegetation past Year 11.

### **6.2.3 Additional Monitoring Requirements**

Additional monitoring requirements to be described in the plan will include fish and invertebrate prey resources that are present within the footprint of the SW Yard Project and will determine whether chemical contamination is present at levels of concern<sup>5</sup> in surface sediments at the SW Yard Project area over time. Detailed requirements are summarized in Table 2C.

#### **6.2.3.1 Fish Presence**

Sampling will be conducted during the peak of the anadromous salmonid juvenile migration period to determine presence and abundance of fish. Fyke nets will be used to collect and identify species and origin (for salmonids, hatchery, or natural origin salmonids) of all fish collected (record fork lengths for salmonids and identify as hatchery or natural origin). Salmonids will be identified to the genus level and species level unless there are specific problems such as the presence of bull trout and identifying them to that level. Non-salmonid fish species should also be identified to at least the genus level.

Monitoring will be conducted three times (early, mid, late) during peak of juvenile salmonid outmigration (March through June). The monitoring is to be conducted during Years 1, 2, 3, 5, 7, and 10. Failure of fish to use the areas could indicate that a basic restoration goal is not being met and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.

#### **6.2.3.2 Invertebrate Prey Resources**

Sampling will be conducted once per monitoring year during the peak juvenile salmonid outmigration to assess benthic community development. Benthic organisms will be sampled with 10-centimeter cores. Five samples will be collected in the off-channel habitat area. In each sample that is collected, invertebrates will be identified to the lowest practical taxonomic level and enumerated. In addition, to measure one of the desired functions of riparian vegetation at the site, fallout insects will be sampled using floating plastic bins distributed throughout the vegetated areas of the site. The sampling is to be conducted during Years 1, 2, 3, 5, 7, and 10. Failure of the benthic community to develop could indicate that a basic restoration goal is not being met and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.

#### **6.2.3.3 Chemical Contamination**

The restoration sites will be monitored to determine if the habitat substrate (sediment surface) becomes contaminated over time. Samples will be collected in the high marsh and associated tidal channels at locations agreed to with the Trustees. The sampling is to be conducted during Years 2, 5, and 10. Sediments will be sampled using grab samples collecting material representative of the top 10 centimeters. Samples will be evaluated for the SMS chemicals. Sample results will be compared to the SQS, also known as the SCO presented in the SMS (Washington Administrative Code 173-204). Analytical procedures and suitability criteria will be reviewed and

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<sup>5</sup> Levels of concern will be determined by Washington State SQS, described in this document in Section 6.2.3.3.

approved by the Trustees and USEPA as part of the final design process. Areas exceeding criteria will trigger discussions with USEPA and the Trustees on the possible causes and appropriate responses. As described in Section 3.3, several storm drains will be rerouted as part of this project. Storm drain rerouting will be designed to avoid impact to the off-channel habitat area. For storm drain outfalls in the vicinity of intertidal habitat benches, water quality requirements will be defined for Trustee approval.

## **7.0 DOCUMENTATION**

### **7.1 DESIGN DOCUMENTATION**

The Performing Parties will submit design documents to the Trustees for review and approval at multiple stages of design. For each design deliverable, formal comments from the Trustees will be provided. The Performing Parties will produce revised versions of each deliverable addressing Trustee comments and will prepare an accompanying “response to comments” document. This process will facilitate Trustee involvement and support throughout the design process.

The following design deliverables will be submitted for review and approval:

1. Conceptual design of habitat area. This package will define the proposed openings to the off-channel habitat area, elevations and contouring within the habitat area, and general planting zones. Trustee approval of this package will be secured prior to preliminary design.
2. Habitat mix gradations and substrate selection package. This package will include proposed gradation for habitat mixes to be used in different areas of the project, habitat mix material specification, and specifications for other primary substrates to be used within the marsh and intertidal areas. This package will include geotechnical and hydrodynamic rationale for selection. Trustee approval of this package will be secured prior to preliminary design.
3. Preliminary design. This package will include preliminary design for all project elements. The level of detail of preliminary design will be based on what is necessary to support the JARPA application, equivalent to an approximately 60% design level. This package will include grading plans and cross sections, material specifications, description of construction sequencing, and planting plans. This package will also include results of the environmental evaluation, geotechnical evaluation, storm drain and utility reconfiguration evaluation, under-pier sediment cleanup approach, and habitat parameter identification described in Sections 3.1, 3.2, 3.3, 3.4, and 3.5, respectively. Approval of this package will be secured prior to submitting the JARPA.
4. Final design. This package will include final design for all project elements. The final design package will include changes to the project that may be required as part of the permitting process. Approval of the final design package will be secured prior to finalizing construction bid documents. Final design of the SW Yard Project must be approved by the Trustees before the Trustees authorize the Performing Parties to begin construction, per Section 3.0. The final design package will include, at a minimum, the following:
  - Detailed design drawings

- Material specifications
- Description of construction sequencing
- Estimated construction schedule
- Planting plans and plant schedule
- Maintenance and Monitoring Plan as described in Section 6.0

## **7.2 CONSTRUCTION COMPLETION REPORT**

Within 60 days of completion of the construction activities, a construction completion report will be prepared that describes the as-built condition of the SW Yard Project. This report will be submitted to the Trustees with the Notice of Completion of Construction in the manner and as required in the Consent Decree and will serve as the baseline for monitoring that will be conducted as described in Section 6.2.

## **7.3 MONITORING AND MAINTENANCE REPORTS**

After each monitoring event as described in Section 6.0 and Tables 2A, B, and C, a report will be prepared for submittal to the Trustees. A draft report will be submitted to the Trustees within 90 days of each monitoring event. Following Trustee review and comment, reports will be finalized.

The following will be included in each report:

- Dates of monitoring activities
- A narrative description of methods and contingency measures taken
- Identification of planted and naturally recruited trees and shrubs
- Data tables
- Species lists
- Color photographs
- Aerial photographs or maps showing extent of vegetation coverage with dominant vegetation types
- Interpretation of results, evaluation relative to success criteria
- A description of maintenance activities that were conducted

Within 90 days of completion of the monitoring, a monitoring completion report will be submitted to the Trustees with the Notice of Completion of Monitoring. Upon completion of the 10-year monitoring period, the Performing Parties will provide written Notice of Completion of Vegetation and Habitat Development and Monitoring Obligations to Trustees in accordance with Sections VII (Restoration Projects) and XXII (Notices and Submissions) of the Consent Decree.

## 8.0 SCHEDULE

All required deliverables and implementation steps are identified in Table 4 attached.

Trustee review of deliverables will be completed within 30 days of receipt, unless a longer review timeframe is expressly set forth in the Consent Decree or approved by all parties in advance. Any delay in the Trustees' review of deliverables shall not, of itself, extend the time for performance of any obligation by the Performing Parties. Deadlines for performance of an obligation may be extended due to additional review time by the Trustees if the Performing Parties provide notice and support for the need for an extension and the Trustees agree that the extension is necessary due to the delay.

To accelerate the overall schedule for habitat restoration, at the Performing Parties' discretion, design tasks per Section 3.0 of this document, design documentation (Section 7.1), and initiation of permitting (Section 4.0) may occur prior to the Effective Date of the Consent Decree. Any work conducted by the Performing Parties prior to the Effective Date of the Consent Decree is at the Performing Parties' full risk and cost; the Trustees shall have no responsibility for any costs incurred by the Performing Parties if a Consent Decree is not entered by the Court.

Initiation of Construction is contingent on Consent Decree entry by the Court and Trustee written authorization for the Performing Parties to commence construction, pursuant to Section VII (Restoration Projects) of the Consent Decree.

Additionally, initiation of construction is contingent on receipt of all necessary permits or documentation of substantive compliance from federal, state, and local agencies. Construction work is also contingent on the authorized in-water construction work windows. Completion of demolition, construction, and planting may require multiple in-water work seasons. The SW Yard Project construction will be completed in accordance with the Trustee-approved construction schedule submitted as part of the final design package.

## 9.0 REFERENCES

Boeing (The Boeing Company), 2009, Boeing Habitat Projects, Attachment A of Consent Decree No. CV-10-758 RSM, Seattle/Tukwila, Washington, December.

CBNRT (Commencement Bay Natural Resource Trustees), 2000, Commencement Bay, Natural Resource Damage Assessment Restoration Monitoring Plan: NOAA, U.S. Department of Interior and the State of Washington, Seattle, Washington.

EBDRP (Elliott Bay/Duwamish Restoration Program), 2000, Intertidal Habitat Projects Monitoring Program, Panel Publication 23, U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office, Lacey, Washington.

Floyd|Snider, 2007, Final Operation, Maintenance, and Monitoring Plan, Todd Shipyards, Sediment Operable Unit, Prepared for Todd Pacific Shipyards Corporation, December 13.



- King County (King County Noxious Weed Control Program), 2007, King County Noxious Weeds List: King County, Department of Natural Resources and Parks, Water and Land Resources Division, Seattle, Washington, <http://your.kingcounty.gov/dnrp/library/water-and-land/weeds/Reports/2007-King-County-Noxious-Weed-List.pdf> (Last accessed June 20, 2016).
- NOAA (National Oceanic and Atmospheric Administration), 2013, Final Lower Duwamish River NRDA Restoration Plan and Programmatic Environmental Impact Statement: Prepared on behalf of the Lower Duwamish River Natural Resource Damage Assessment Trustee Council, Seattle, Washington.
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- WSNWC (Washington State Noxious Weed Control Board), 2008, Washington State Noxious Weed List: Washington State Noxious Weed Control Board, Olympia, [http://www.nwcb.wa.gov/weed\\_list/weed\\_list.htm](http://www.nwcb.wa.gov/weed_list/weed_list.htm) (accessed January 21, 2008).

## Tables

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Scope of Work  
Vigor Shipyards Habitat Projects

**TABLE 1**  
**QUANTIFICATION OF HABITAT RESTORATION ELEMENTS**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

Natural Resource Benefits		Natural Resource Work at Vigor Shipyards		
		Work Performed as Part of TSSOU Remedial Action (2004 to 2006)	Additional Habitat Restoration in the SW Yard to be Performed as Required by NRD Settlement CD	Total
Habitat Area Restored/Created	Riparian	None	0.29-acre riparian buffer between +18 and +12 feet MLLW	0.29 acres
	Marsh	None	0.35-acre marsh vegetation between +5 and +12 MLLW	0.35 acres
	Intertidal	0.47-acre habitat bench between +2 and -2 feet MLLW	2.03 acres between -2 and +5 MLLW	2.5 acres
Total Area Dedicated to Habitat (Riparian + Marsh + Intertidal)		0.47 acres	2.67 acres	3.14 acres
Overwater Coverage Removed		69,784 sq. ft (or 1.60 acres)	49,800 sq. ft (or 1.14 acres)	2.74 acres
Uplands Converted to Aquatic Habitat Area		None	64,500 sq. ft (or 1.48 acres)	1.48 acres
Creosote-Treated Pilings Removed		Approx. 2,770 piling	Approx. 3,000 piling	5,770 pilings
Riprap Armored Slope Area Softened with Habitat Mix*		99,400 sq. ft (or 2.28 acres) above elevation -10 feet MLLW	33,500 sq. ft (or 0.77 acres) above elevation -10 feet MLLW	3.05 acres

Note:

- \* At the time of construction, as a one-time pilot, voids within riprap armored slope above elevation -10 MLLW will be filled with habitat mix. This is to be conducted over approximately 3 acres, and is not intended to be replenished if erosional forces cause the habitat mix to move downslope.

Abbreviations:

- MLLW Mean Lower Low Water  
sq. ft Square feet  
SW Yard Southwest Yard  
TSSOU Todd Shipyard Sediment Operable Unit

Scope of Work  
Vigor Shipyards Habitat Projects

**TABLE 2A**  
**SUCCESS CRITERIA FOR RESTORATION PROJECTS (PHYSICAL CRITERIA)**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

	<b>Intertidal Habitat Area Integrity (SW Yard Project and WW Bench)</b>	<b>Material Stability (SW Yard Project and WW Bench)</b>	<b>Habitat Mix Stability (SW Yard Project and WW Bench)</b>	<b>Tidal Circulation (SW Yard Project Only)</b>	<b>Sediment/Soil Structure (SW Yard Project Only)</b>	<b>Elevation/Channel Morphology (SW Yard Project Only)</b>
<b>Description:</b>	The total acreage of each elevation zone between +12 ft MLLW and -2 ft MLLW will remain at least 90% of the as-built acreage.	The as-designed contour elevations, especially for plant introductions, will be +/- 0.5 ft of the elevations specified in the construction plan. 75% of the target elevations will be maintained through Year 5.	Habitat mix will remain present in migration corridor and WW Bench.	The tidal amplitude, as determined by both timing and elevation of high and low tide events, is equivalent inside and outside of the project area.	Over time, the site may accumulate fine-grained materials and organic matter. This would be evidenced by a decrease in mean grain size and increase in organic carbon in the surface sediments and site soils. Sediment/soil structure data will be collected to assist in defining potential contingency measures associated with biological monitoring.	The as-designed low gradients necessary for marsh development are stable over time.
<b>Monitoring Tasks:</b>	Estimate the total acreage in each elevation zone between +12 ft MLLW and -2 ft MLLW of the project and provide "as-built" plan drawings upon project completion. Using the "as-builts," and by visual inspection using permanent transects spaced in equal intervals north to south in the marsh areas, inspect after extreme episodic flood events to determine erosional impacts.	"As-built" plan drawings will be provided upon project completion. Using the "as-builts," and by visual inspection using permanent transects spaced in equal intervals north to south in the marsh areas, estimate changes in surface topography. Visually inspect after extreme episodic flood events to determine erosional impacts.	Periodic visual inspections at low tide of the migratory corridor and the WW Bench for changes in habitat mix presence and gradation. Inspections will be made at permanent transect locations representative of site conditions.	Periodic visual inspections of the project area for impeded tidal flow, or potential fish stranding. Record tidal stage from tidal gauges during inspections.	Determine grain size distribution and organic carbon determination by collecting core samples in conjunction with benthic invertebrate sampling. Test for total nitrogen using standard analytical techniques (if warranted due to concerns about vegetation health).	Estimate changes in gradient annually (after runoff) and after episodic flood events using permanent transects spaced in equal intervals north to south in the marsh areas.
<b>Monitoring Methods:</b>	Geo-referenced aerial photography, visual inspection, photo-points.	Geo-referenced aerial photography, visual inspection, photo-points.	Low tide visual inspection.	Tidal gauges, visual inspection.	Sampling as defined for benthic invertebrate sampling (Table 2C).	Geo-referenced aerial photography, visual inspection, photo-points.
<b>Schedule:</b>	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.	Years: 1, 2, 5, 7, and 10.
<b>Contingency Measures:</b>	Observation of deviation from this criterion would trigger investigation into the size of the area affected, evaluation of the cause, and potential actions.	Non-structural approaches such as vegetation, fiber mats, or other such "soft" engineered options, will be considered to stabilize excessive erosion.	Observation of significant erosion or removal of habitat mix would trigger investigation into the size of the area affected, evaluation of the cause, and potential actions.	Failures of tidal circulation or inundation as prescribed for the site triggers discussion of potential remedies.	If the intertidal sediments or upland soils do not support the biological production anticipated, amendments can be considered to augment nutrient deficiencies.	Gradient changes that limit the establishment of marsh vegetation or impact tidal circulation will trigger discussion of potential remedies, which may include both structural and non-structural alternatives.

Abbreviations:  
Year 0 "Year 0" is defined as directly following construction completion at the SW Yard Project. This definition of Year 0 will also be used at the WW Bench, so that monitoring dates are concurrent between the two areas.  
ft Feet  
MLLW Mean Lower Low Water  
SW Yard Southwest Yard Habitat Project  
WW Bench West Waterway Habitat Bench

Scope of Work  
Vigor Shipyards Habitat Projects

**TABLE 2B**  
**SUCCESS CRITERIA FOR RESTORATION PROJECTS (BIOLOGICAL CRITERIA)**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

(Biological Criteria in this Table 2B are applicable at SW Yard Project Area only – marsh and riparian zones)

Description:	Marsh Vegetation Areal Coverage and Survival	Marsh Area Invasive Species Areal Coverage	Herbivore Control Measures	Riparian Vegetation Areal Coverage and Survival	Riparian Area Invasive Species Areal Coverage
<b>Monitoring Tasks:</b>	Percent cover of thriving, healthy vegetation of targeted marsh vegetation species should be increasing (or stable at maturity) within the elevations suitable to marsh establishment, with the desired mix of species present. Objectives are 25% cover of targeted species at 3 years, 50% cover at 5 years, and not less than 75% after 10 years.	The project should not at any time contain more than 5% cover by area of non-native or invasive plant species within the marsh elevations (below elevation +12 ft MLLW).	Physical herbivore barriers shall successfully prevent damage to vegetation by Canada geese or other herbivores, until vegetation is fully established. Installation of devices must take place before or simultaneous with planting of marsh vegetation. Periodic, and initially frequent, visual inspections of herbivore exclusion systems shall be conducted, with immediate repair to reduce damage until the plant root systems have established themselves. Devices must be maintained for 4 years post-planting (initial planting or re-planting). Periodic monitoring should confirm adequate site maintenance of devices. Observations will be logged at each monitoring event for 5 years post-planting (or re-planting). Visual inspection.	Percent cover of thriving, healthy native riparian vegetation should be stable or increasing over time, and cover not less than 90% of the upland vegetated area of the project after 10 years. A diversity of species should be present - a minimum of 5% cover each of six species shall be present, ideally at least four species other than willow, alder, and cottonwood. An as-planted survey will be mapped following initial planting(s). The "as-builts" will be used to confirm that the plantings are installed per the design specifications. A color aerial photograph of the full project area will be collected following initial planting(s) and at each monitoring event. Permanent photo-points will be established through the riparian zones and color photographs will be collected each sampling period. A general walking inspection of the riparian areas will be made to identify any specific areas of concern regarding vegetative health. Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in areal coverage of targeted riparian vegetation species, and overall vegetative community health and survival.	The project should not contain more than 5% cover by area of non-native or invasive species. Monitoring will be performed as described for Riparian Vegetation Areal Coverage and Survival. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated.
<b>Monitoring Methods:</b>	Post-construction, permanent transects will be placed at equal intervals traversing the marsh area north to south. Permanent photo-points will be established along the transects and color photographs will be collected during each monitoring event. A general walking inspection of the full marsh area will be made to identify any specific areas of concern regarding vegetative health. Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in aerial coverage of targeted marsh vegetation species, and overall vegetative community health and survival.	Monitoring will be performed as described for Marsh Vegetation Areal Coverage and Survival. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated.	Periodic, and initially frequent, visual inspections of herbivore exclusion systems shall be conducted, with immediate repair to reduce damage until the plant root systems have established themselves. Devices must be maintained for 4 years post-planting (initial planting or re-planting). Periodic monitoring should confirm adequate site maintenance of devices. Observations will be logged at each monitoring event for 5 years post-planting (or re-planting). Visual inspection.	An as-planted survey will be mapped following initial planting(s). The "as-builts" will be used to confirm that the plantings are installed per the design specifications. A color aerial photograph of the full project area will be collected following initial planting(s) and at each monitoring event. Permanent photo-points will be established through the riparian zones and color photographs will be collected each sampling period. A general walking inspection of the riparian areas will be made to identify any specific areas of concern regarding vegetative health. Photographs and inspections will be compared to the identical photographs and inspections from the previous monitoring event, to determine change in areal coverage of targeted riparian vegetation species, and overall vegetative community health and survival.	Monitoring will be performed as described for Riparian Vegetation Areal Coverage and Survival. Photographs and inspections will be evaluated for presence of invasive species, and percent cover by area of non-native or invasive species estimated.
<b>Contingency Measures:</b>	Evidence of decreasing areal coverage of marsh vegetation target species or evidence in reduction in plant community health and survival will trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species, elevation, and other design factors will be reexamined and adjusted if new information suggests adjustment is appropriate.	Any occurrence of non-native and invasive species exceeding 5% by vegetated area, will be controlled primarily by physical means (weeding). Physical removal will occur as soon as invasive plants are identified and prior to seed set. Chemical treatment (herbicides) will only be considered if physical removal fails. <i>Spartina</i> spp. that is found to colonize any portion of the site (irrespective of the areal coverage) will be immediately controlled.	Immediately repair of any damage to the herbivore exclusion devices caused by logs, trampling, or geese. If damage is observed from Nutria, protective covers around individual plants or stands will be installed and monitored by visual inspection.	Evidence of reduction in areal coverage of targeted riparian vegetation species or evidence in reduction in plant community health and survival will trigger consideration of contingency measures. Depending on the hypothesized reason for failure, responses could include additional planting, soil amendments, herbivore exclusions, and/or focused stewardship efforts. Assumptions about appropriate plant species, elevation, and other design factors will be reexamined and adjusted if new information suggests adjustment is appropriate.	Any occurrence of non-native and invasive species exceeding 5% by vegetated area, will be controlled primarily by physical means (weeding). Physical removal will occur as soon as invasive plants are identified and prior to seed set. Chemical treatment (herbicides) will only be considered if physical removal fails. <i>Spartina</i> spp. that is found to colonize any portion of the site (irrespective of the areal coverage) will be immediately controlled.
<b>Schedule:</b>	Years: 0, 1, 2, 3, 5, 7, and 10.	Years: 0, 1, 2, 3, 5, 7, and 10.	Years 0 through 5 post-planting (or re-planting). If the plant community is well-established by Year 3, monitoring may be discontinued.	Years: 0, 1, 2, 3, 5, 7, and 10.	Years: 0, 1, 2, 3, 5, 7, and 10.

Abbreviations: Year 0 "Year 0" is defined as directly following construction completion. Biological monitoring to be conducted in Year 0 will be conducted within 60 days of completion of planting if Feet

MLLW Mean Lower Low Water  
SW Yard Project Southwest Yard Habitat Project

Scope of Work

Vigor Shipyards Habitat Projects

**TABLE 2C**  
**ADDITIONAL MONITORING REQUIREMENTS**  
 Vigor Shipyards Habitat Projects  
 Seattle, Washington

(Additional Monitoring Requirements in this Table 2C are applicable at SW Yard Project Area only - marsh and tidal channels)

	<b>Fish Presence</b>	<b>Invertebrate Prey Resources</b>	<b>Chemical Contamination</b>
<b>Description:</b>	Estuarine fish should access the project, with increasing utilization and colonization by resident species. Juvenile salmonids should be present.	Invertebrate prey taxa and fallout insects known to be important to juvenile salmonids should be present.	Habitat substrate sediments should remain free of chemical contamination at levels of concern, determined by Washington State SQS standards.
<b>Monitoring Tasks:</b>	Monitor fish use: Record fork length and source (hatchery or wild) for salmonids. Record presence (species) of non-salmonid fishes. Salmonids will be identified to the genus level and species level unless there are specific problems such as the presence of bull trout and identifying them to that level. Non-salmonid fish species should also be identified to at least the genus level.	Monitor benthic invertebrate community development. Five samples will be collected in the high marsh and associated tidal channels. In each sample that is collected, invertebrates will be identified to the lowest practical taxonomic level and enumerated. In addition, fallout insects will be sampled using floating plastic bins distributed throughout the site.	The restoration sites will be monitored to determine if the habitat substrate (sediment surface) becomes contaminated over time. Five sediment samples will be collected in the high marsh and associated tidal channels. Samples will be evaluated for the Sediment Management Standards chemicals. Sample results will be compared to the Sediment Cleanup Objectives (benthic SQS - sediment quality standards).
<b>Monitoring Methods:</b>	Fyke net. Nets set before high tide and monitored during subsequent ebb. Monitor three times (early, mid, late) during peak of juvenile salmonid outmigration (typically March through June).	Samples will be collected using grab samples collecting material representative of the top 10 centimeters (cm). Samples will be collected once each monitoring year during the peak juvenile salmonid outmigration.	Sediments will be sampled using grab samples collecting material representative of the top 10 cm. Samples will be collected concurrent with the benthic invertebrate sampling, and adjacent to the benthic invertebrate sample locations.
<b>Schedule:</b>	Years: 1, 2, 3, 5, 7, and 10.	Years: 1, 2, 3, 5, 7, and 10.	Years: 2, 5, and 10.
<b>Contingency Measures:</b>	Failure of fish to use the areas could indicate that a basic restoration goal is not being met, and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.	Failure of the benthic community to develop could indicate that a basic restoration goal is not being met, and will trigger discussions regarding possible causes. The purpose of this monitoring activity is to provide data as requested by the Trustees. There are no success criteria, contingency measures, or adaptive management activities associated with this monitoring requirement.	Contamination of the sediment surface at levels of concern could indicate that a basic restoration goal is not being met, and will trigger discussions regarding possible causes and appropriate responses.

Scope of Work  
Vigor Shipyards Habitat Projects

**TABLE 3**  
**NOXIOUS WEEDS LIST**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

Common Name	Scientific Name	State Listing <sup>1</sup>	King County Listing <sup>2</sup>	Common Name	Scientific Name	State Listing <sup>1</sup>	King County Listing <sup>2</sup>
absinth wormwood	<i>Artemisia absinthium</i>	C	ND	knapweed, spotted	<i>Centaurea biebersteinii</i>	B	B
Austrian fieldcress	<i>Rorippa austriaca</i>	B	B	knapweed, Vochin	<i>Centaurea nigrescens</i>	A	A
babysbreath	<i>Gypsophila paniculata</i>	C	—	knotweed, Bohemian	<i>Polygonum bohemicum</i>	B	ND
blackberry, evergreen	<i>Rubus laciniatus</i>	—	WOC	knotweed, giant	<i>Polygonum sachalinense</i>	B	ND
blackberry, Himalayan	<i>Rubus armeniacus</i>	—	WOC	knotweed, Himalayan	<i>Polygonum polystachyum</i>	B	ND
blackgrass	<i>Alopecurus myosuroides</i>	B	B	knotweed, Japanese	<i>Polygonum cuspidatum</i>	B	ND
blueweed, viper's bugloss	<i>Echium vulgare</i>	B	B	kochia	<i>Kochia scoparia</i>	B	B
Brazilian elodea	<i>Egeria densa</i>	B	B	kudzu	<i>Pueraria montana var. lobata</i>	A	A
buffalobur	<i>Solanum rostratum</i>	A	A	lawnweed	<i>Soliva sessilis</i>	A	A
bugloss, annual	<i>Anchusa arvensis</i>	B	B	lepyrodicilis	<i>Lepyrodiclis holosteoides</i>	B	B
bugloss, common	<i>Anchusa officinalis</i>	B	B	longspine sandbur	<i>Cenchrus longispinus</i>	B	B
butterfly bush	<i>Buddleia davidii</i>	C	ND	loosestrife, garden	<i>Lysimachia vulgaris</i>	B	B
camelthorn	<i>Alhagi maurorum</i>	B	B	loosestrife, purple	<i>Lythrum salicaria</i>	B	B
clary sage	<i>Salvia sclarea</i>	A	A	loosestrife, wand	<i>Lythrum virgatum</i>	B	—
cockle, white	<i>Silene latifolia ssp. alba</i>	C	—	mayweed, scentless	<i>Matricaria perforata</i>	C	—
common catsear	<i>Hypochaeris radicata</i>	B	—	meadow clary	<i>Salvia pratensis</i>	A	A
common crupina	<i>Crupina vulgaris</i>	A	A	Mediterranean sage	<i>Salvia aethiops</i>	A	A
common fennel	<i>Foeniculum vulgare</i>	B	ND	milk thistle	<i>Silybum marianum</i>	A	A
common groundsel	<i>Senecio vulgaris</i>	C	ND	nightshade, bittersweet	<i>Solanum dulcamara</i>	—	WOC
common reed	<i>Phragmites australis</i>	C	C	nightshade, silverleaf	<i>Solanum elaeagnifolium</i>	A	A
common St. Johnswort	<i>Hypericum perforatum</i>	C	ND	old man's beard	<i>Clematis vitalba</i>	C	ND
common tansy	<i>Tanacetum vulgare</i>	C	ND	oxeye daisy	<i>Leucanthemum vulgare</i>	B	ND
cordgrass, common	<i>Spartina anglica</i>	B	B	parrotfeather	<i>Myriophyllum aquaticum</i>	B	B
cordgrass, dense flower	<i>Spartina densiflora</i>	A	A	perennial pepperweed	<i>Lepidium latifolium</i>	B	B
cordgrass, salt meadow	<i>Spartina patens</i>	A	A	perennial sowthistle	<i>Sonchus arvensis</i>	B	B
cordgrass, smooth	<i>Spartina alterniflora</i>	B	B	poison-hemlock	<i>Conium maculatum</i>	C	ND
cress, hoary	<i>Cardaria draba</i>	C	—	policeman's helmet	<i>Impatiens glandulifera</i>	B	B
curly-leaf pondweed	<i>Potamogeton crispus</i>	C	ND	primrose, water	<i>Ludwigia hexapetala</i>	B	B
dodder, smoothseed alfalfa	<i>Cuscuta approximata</i>	C	—	primrose-willow, floating	<i>Ludwigia peploides</i>	A	A
dyers woad	<i>Isatis tinctoria</i>	A	A	puncturevine	<i>Tribulus terrestris</i>	B	—
English holly	<i>Ilex aquifolium</i>	—	WOC	reed canarygrass	<i>Phalaris arundinacea</i>	C	ND
English laurel	<i>Prunus laurocerasus</i>	—	WOC	reed sweetgrass	<i>Glyceria maxima</i>	A	A
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	B	ND	rush skeletonweed	<i>Chondrilla juncea</i>	B	B
fanwort	<i>Cabomba caroliniana</i>	B	B	Russian knapweed	<i>Acroptilon repens</i>	B	B
field bindweed	<i>Convolvulus arvensis</i>	C	ND	rye, cereal	<i>Secale cereale</i>	C	—
fragrant water lily	<i>Nymphaea odorata</i>	C	ND	saltcedar	<i>Tamarix ramosissima</i>	B	B
garlic mustard	<i>Alliaria petiolata</i>	A	A	Scotch broom	<i>Cytisus scoparius</i>	B	ND
giant hogweed	<i>Heracleum mantegazzianum</i>	A	A	Spanish broom	<i>Spartium junceum</i>	A	A
goatgrass, jointed	<i>Aegilops cylindrica</i>	C	—	spikeweed	<i>Hemizonia pungens</i>	C	—
goatsrue	<i>Galega officinalis</i>	A	A	spurge flax	<i>Thymelaea passerina</i>	A	A
gorse	<i>Ulex europaeus</i>	B	B	spurge laurel	<i>Daphne laureola</i>	B	ND
grass-leaved arrowhead	<i>Sagittaria graminea</i>	B	B	spurge, eggleaf	<i>Euphorbia oblongata</i>	A	A
hairy willowherb	<i>Epilobium hirsutum</i>	C	C	spurge, leafy	<i>Euphorbia esula</i>	B	B
hawkweed, mouseear	<i>Hieracium pilosella</i>	B	B	spurge, myrtle	<i>Euphorbia myrsinites</i>	B	ND
hawkweed, orange	<i>Hieracium aurantiacum</i>	B	B	starthistle, purple	<i>Centaurea calcitrapa</i>	A	A
hawkweed, oxtongue	<i>Picris hieracioides</i>	B	B	starthistle, yellow	<i>Centaurea solstitialis</i>	B	B
hawkweed, polar	<i>Hieracium atratum</i>	B	B	sulfur cinquefoil	<i>Potentilla recta</i>	B	B
hawkweed, queen-devil	<i>Hieracium glomeratum</i>	B	B	swainsonpea	<i>Sphaerophysa salsula</i>	B	B
hawkweed, smooth	<i>Hieracium laevigatum</i>	B	B	Syrian bean-caper	<i>Zygophyllum faba</i>	A	A
hawkweed, yellow	<i>Hieracium caespitosum</i>	B	B	tansy ragwort	<i>Senecio jacobaea</i>	B	B
hawkweed, yellow devil	<i>Hieracium floribundum</i>	A	A	Texas blueweed	<i>Helianthus ciliaris</i>	A	A
Hedge Bindweed	<i>Calystegia sepium</i>	—	WOC	thistle, bull	<i>Cirsium vulgare</i>	C	ND
hedgearsley	<i>Torilis arvensis</i>	B	B	thistle, Canada	<i>Cirsium arvense</i>	C	ND
henbane, black	<i>Hyocyamus niger</i>	C	—	thistle, Italian	<i>Carduus pycnocephalus</i>	A	A
herb Robert	<i>Geranium robertianum</i>	B	ND	thistle, musk	<i>Carduus nutans</i>	B	B
hoary alyssum	<i>Berteroa incana</i>	B	B	thistle, plumeless	<i>Carduus acanthoides</i>	B	B
houndstongue	<i>Cynoglossum officinale</i>	B	—	thistle, Scotch	<i>Onopordum acanthium</i>	B	B
hydrilla	<i>Hydrilla verticillata</i>	A	A	thistle, slenderflower	<i>Carduus tenuiflorus</i>	A	A
indigobush	<i>Amorpha fruticosa</i>	B	—	toadflax, Dalmatian	<i>Linaria dalmatica ssp. dalmatica</i>	B	B
ivy, Atlantic	<i>Hedera hibernica</i>	C	ND	toadflax, yellow	<i>Linaria vulgaris</i>	C	ND
ivy, English	<i>Hedera helix</i> Baltica	C	ND	velvetleaf	<i>Abutilon theophrasti</i>	A	A
ivy, English	<i>Hedera helix</i> Pittsburgh	C	ND	white bryony	<i>Bryonia alba</i>	B	B
ivy, English	<i>Hedera helix</i> Star	C	ND	whiteweed, hairy	<i>Cardaria pubescens</i>	C	—
johnsongrass	<i>Sorghum halepense</i>	A	A	wild carrot	<i>Daucus carota</i>	B	ND
knapweed, bighead	<i>Centaurea macrocephala</i>	A	A	wild chervil	<i>Anthriscus sylvestris</i>	B	B
knapweed, black	<i>Centaurea nigra</i>	B	B	wild four o'clock	<i>Mirabilis nyctaginea</i>	A	—
knapweed, brown	<i>Centaurea jacea</i>	B	B	yellow archangel	<i>Lamium galeobdolon</i>	—	ND
knapweed, diffuse	<i>Centaurea diffusa</i>	B	B	yellow flag iris	<i>Iris pseudacorus</i>	C	ND
knapweed, meadow	<i>Centaurea jacea x nigra</i>	B	B	yellow floating heart	<i>Nymphoides peltata</i>	B	B
				yellow nutsedge	<i>Cyperus esculentus</i>	B	B

1. WSNWCB, 2008. A = Class A Noxious Weed C = Class Noxious Weed WOC = Weed of Concern  
2. King County, 2007. B = Class B Noxious Weed ND = Non-Designated Noxious Weed — = Not on list

Scope of Work  
Vigor Shipyards Habitat Projects

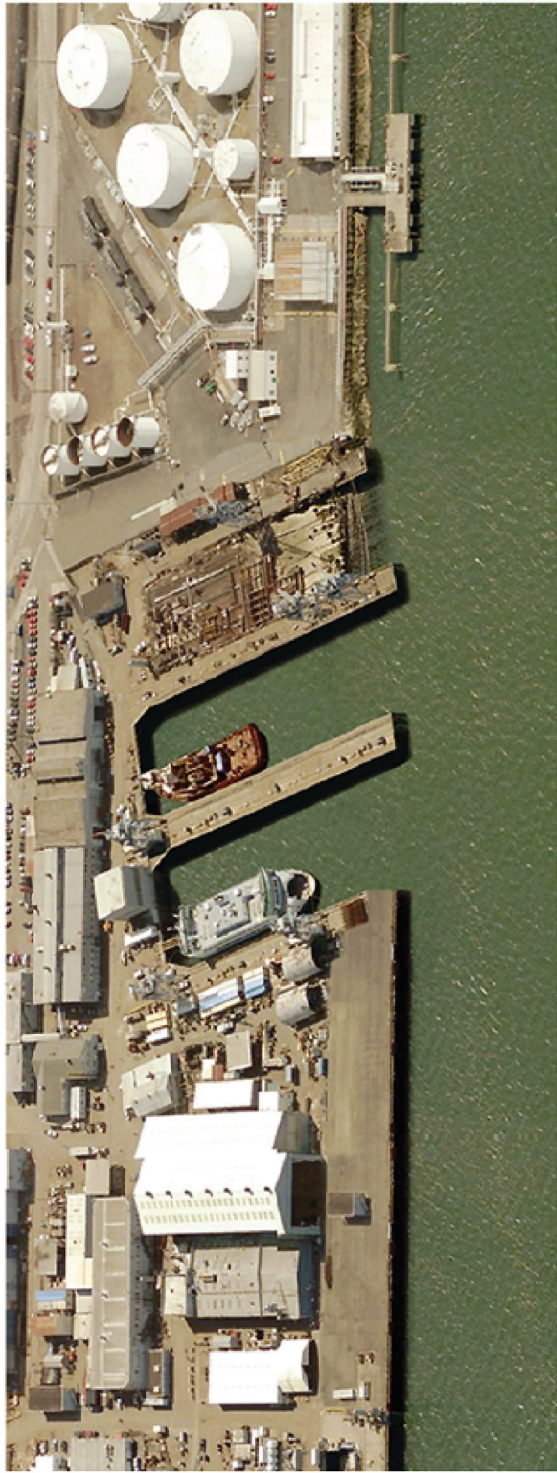
**TABLE 4**  
**REQUIRED DELIVERABLES AND IMPLEMENTATION STEPS**  
Vigor Shipyards Habitat Projects  
Seattle, Washington

<b>Deliverables and Implementation Steps</b>	<b>Completion Schedule</b>
Effective Date of the Consent Decree (CD)	
Submit Draft Sampling and Analysis Plan (SAP) for Pre-Design Investigation to Trustees and USEPA for Review	Within 60 Days of Effective Date of CD
Conduct Pre-Design Investigation	Within 60 days of SAP Approval
Submit Conceptual Design Package to Trustees for Review	Within 180 days of Effective Date of CD
Submit Habitat Mix Gradations and Substrate Selection Package to Trustees for Review	Concurrent with Conceptual Design Package
Submit Preliminary Design Package to Trustees for Review	Within 180 days of Trustee Approval of Conceptual Design and Habitat Mix Gradations and Substrate Selection Packages
Submit JARPA Permit Application	Within 30 days of Trustee Approval of Preliminary Design Package
Submit Remedial Action Work Plan (RAWP) to USEPA for Review	Within 60 days of Submitting the Preliminary Design Package to Trustees for Review
Submit Final Design Package to Trustees for Review	Within 90 days of Trustee Approval of Preliminary Design Package
Submit Maintenance and Monitoring Plan to Trustees for Review	Concurrent with Final Design Package
Prepare Construction Documents	Within 90 days of Trustee Approval of Final Design Package
Engage Contractor and Implement Construction <i>(Note that in-water construction activities can only occur with permitted "fish windows." Construction is anticipated to require two in-water construction seasons).</i>	Following Trustee Approval of Final Design Package and within 60 days of Receipt of Required Permits
Submit Construction Completion Report to Trustees and USEPA for Review	Within 60 days of Completion of Construction
Implement Monitoring and Maintenance Plan and Submit Monitoring and Maintenance Reports to Trustees	Following Completion of Construction – "Year 0" Monitoring is performed within 60 days of completion of planting
Submit Monitoring Completion Report to Trustees	Within 90 days of completion of the 10-year Monitoring Period
Submit written Notice of Completion of Vegetation and Habitat Development and Monitoring Obligations to Trustees	Within 90 days of completion of the 10-year Monitoring Period
Submit Long-Term Stewardship Plan to Trustees for Review	Within 120 days of completion of the 10-year Monitoring Period

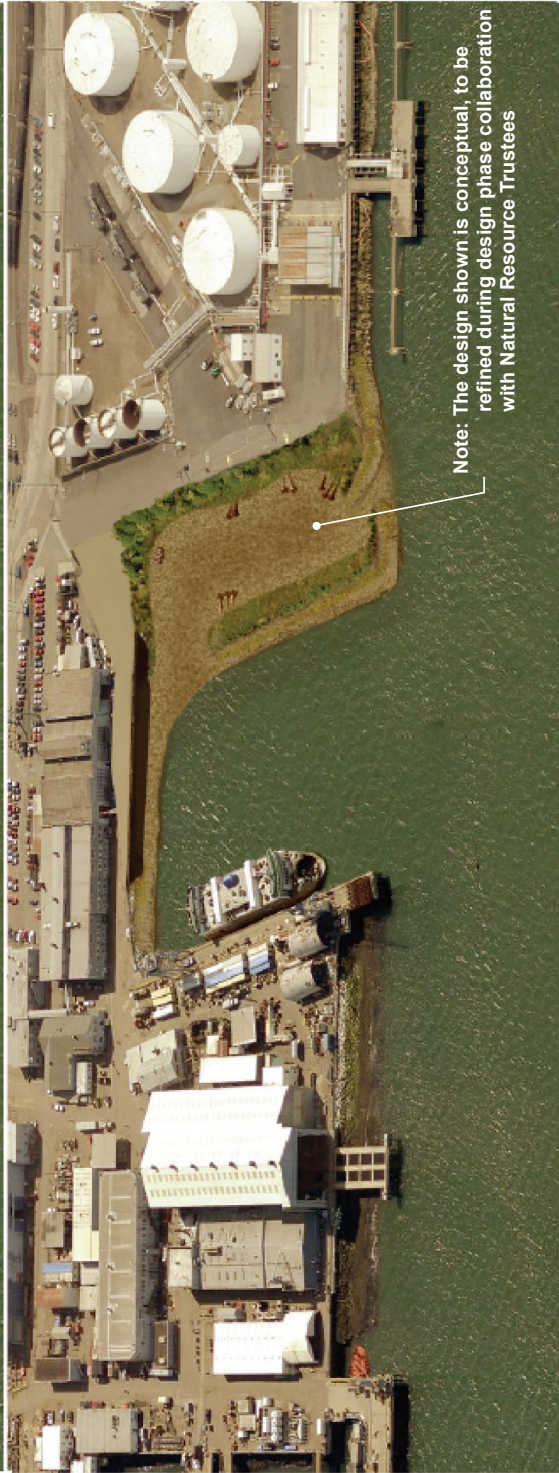


## Figures

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**Before**



**After**

Note: The design shown is conceptual, to be refined during design phase collaboration with Natural Resource Trustees

Figure 1  
Rendering;  
Proposed Southwest Yard Project

Vigor Shipyards  
NRD Settlement

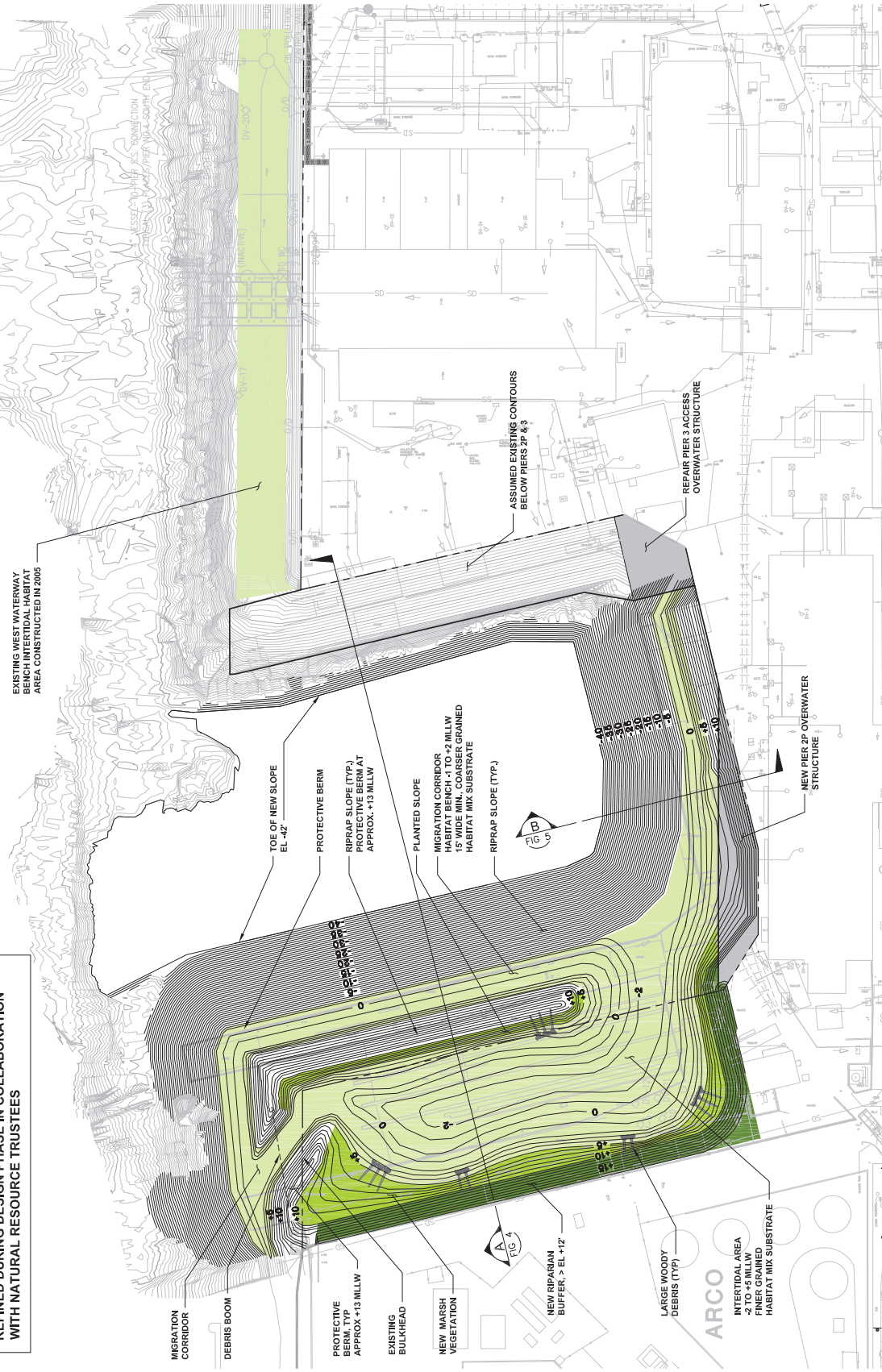
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**NOTE: THE DESIGN SHOWN HERE IS CONCEPTUAL, TO BE REFINED DURING DESIGN PHASE IN COLLABORATION WITH NATURAL RESOURCE TRUSTEES**

**NOTES:**  
 1. ELEVATIONS SHOWN ARE IN MLLW VERTICAL DATUM.



**DRAFT**

DRAWN: JH PROJECT NO: 111088  
 DESIGN: SS SCALE: 1"=100'  
 CHECKED: BR DATE: MARCH, 2017  
 DRAWING NO. **FIGURE 2**  
 SHEET NO. OF

NRD SETTLEMENT  
 SOUTHWEST YARD  
 PROPOSED DEVELOPMENT



NO.	DATE	BY	REVISION

**kpff**  
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**ZONE 3:**

OPEN-WATER RESTRICTED AREA. NO STRUCTURES OR MOORAGE ALLOWED. VESSEL ACCESS ALLOWED FOR TEMPORARY SUPPORT OPERATIONS ONLY, BETWEEN MARCH 1 AND JUNE 30 OF EACH YEAR, NON-EMERGENCY MOTORIZED VESSEL OPERATIONS RESTRICTED TO 3 HOURS MAXIMUM DURATION PER 24-HOUR PERIOD.

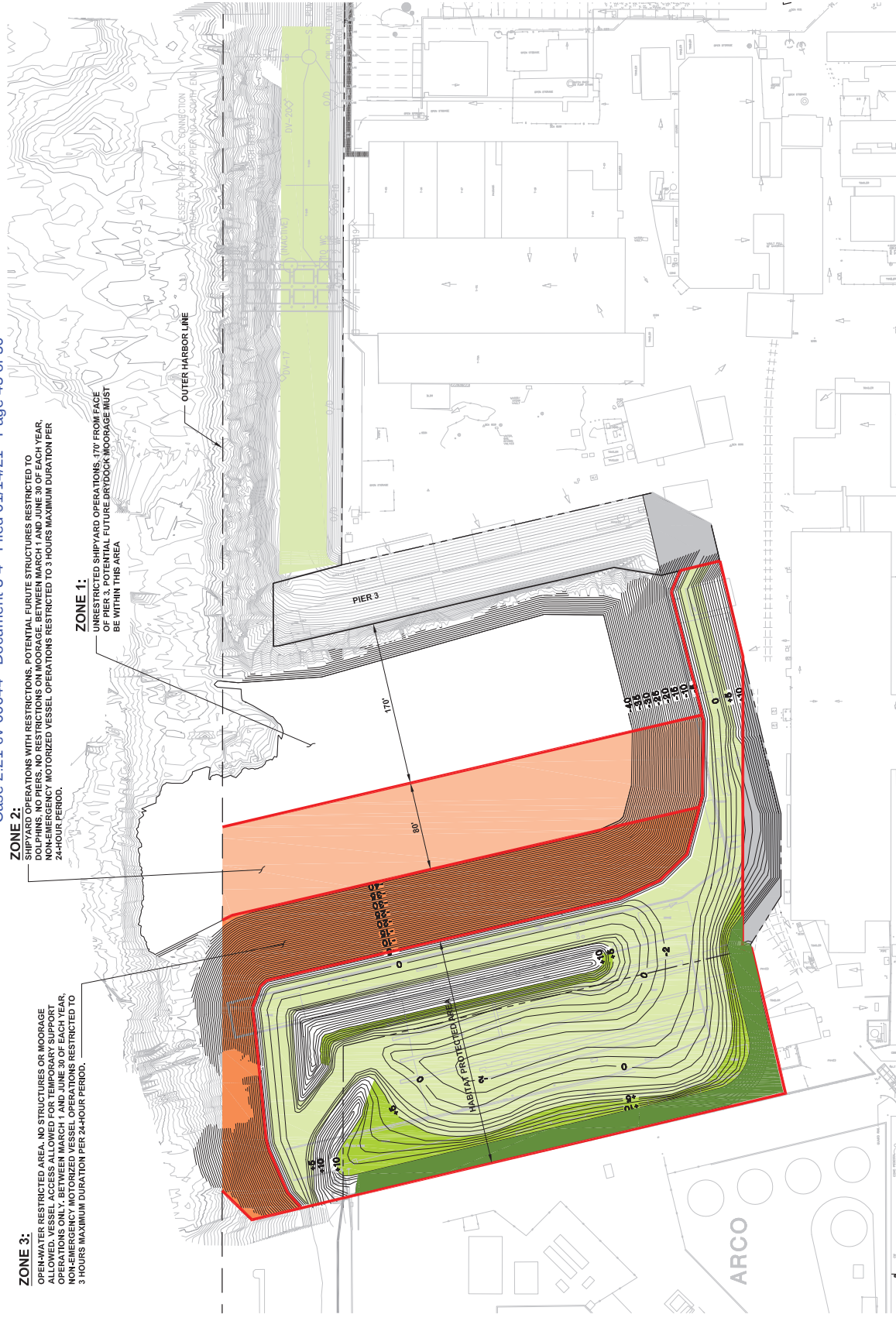
**ZONE 2:**

SHIPYARD OPERATIONS WITH RESTRICTIONS. POTENTIAL FUTURE STRUCTURES RESTRICTED TO DOLPHINS, NO PIERS, NO RESTRICTIONS ON MOORAGE, BETWEEN MARCH 1 AND JUNE 30 OF EACH YEAR, NON-EMERGENCY MOTORIZED VESSEL OPERATIONS RESTRICTED TO 3 HOURS MAXIMUM DURATION PER 24-HOUR PERIOD.

**ZONE 1:**

UNRESTRICTED SHIPYARD OPERATIONS, 170' FROM FACE OF PIER 3, PER ALL FUTURE DRYDOCK MOORAGE MUST BE WITHIN THIS AREA.

**NOTES:**  
1. ELEVATIONS SHOWN ARE IN MLLW VERTICAL DATUM.



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NRD SETTLEMENT  
SOUTHWEST YARD  
OPEN WATER RESTRICTED AREAS

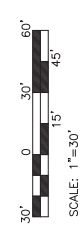
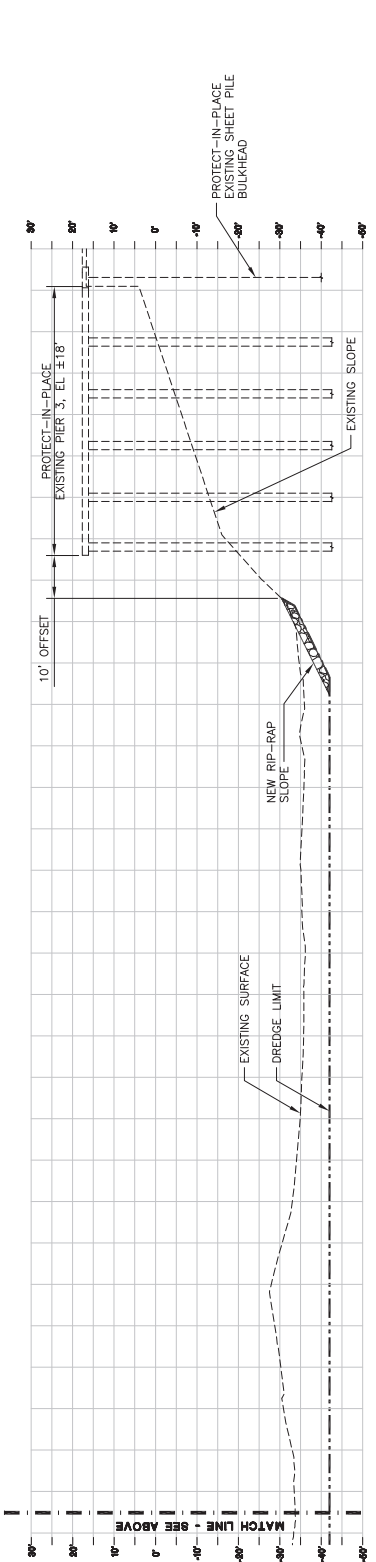
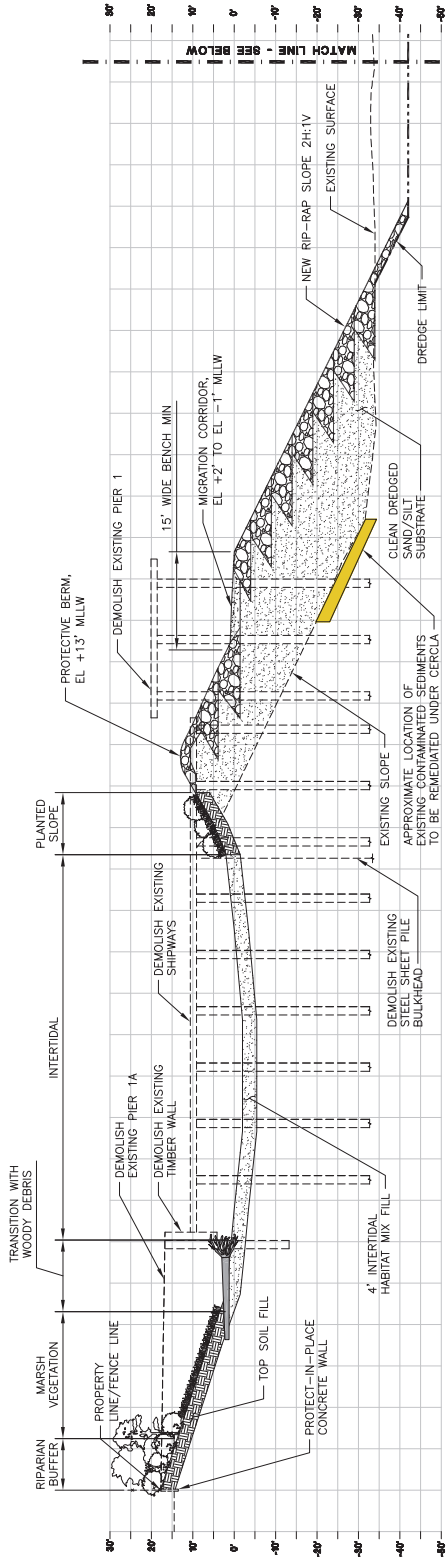
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DESIGN: SS SCALE: 1"=100'  
CHECKED: BR DATE: MARCH, 2017  
DRAWING NO: **FIGURE 3**  
SHEET NO. OF

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**NOTES:**

- 1. ELEVATIONS SHOWN ARE IN MLLW VERTICAL DATUM.



**SECTION A**  
SCALE: 1"=30'

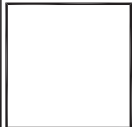
**DRAFT**

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DESIGN: SS	SCALE:
CHECKED: BR	DATE: MARCH, 2017
DRAWING NO.	<b>FIGURE 4</b>
SHEET NO.	OF

NRD SETTLEMENT  
SOUTHWEST YARD  
SECTIONS



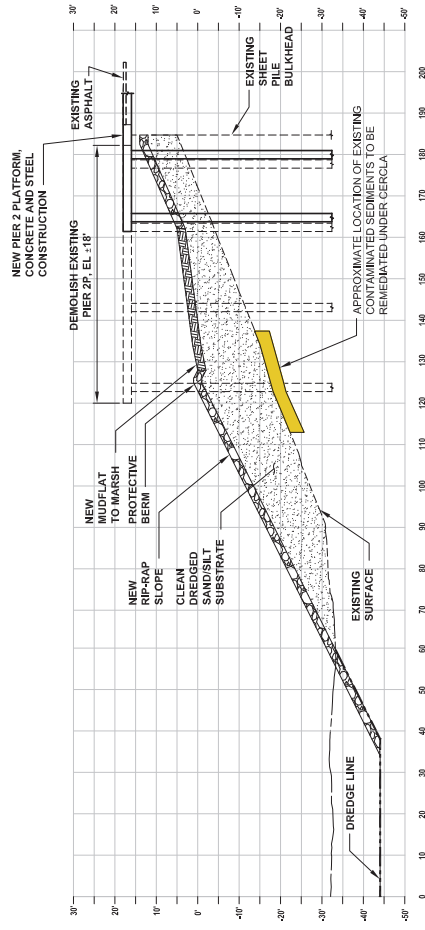
NO.	DATE	BY	REVISION



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1501 5th Avenue, Suite 1300  
Denver, CO 80202 | PH: 303.733.0900

**NOTES:**

- 1. ELEVATIONS SHOWN ARE IN HULLY VERTICAL DATUM



**SECTION B**  
SCALE: 1"=30'



**DRAFT**

DRAWN: JH	PROJECT NO.: 111088
DESIGN: SS	SCALE:
CHECKED: BR	DATE: MARCH, 2017
DRAWING NO.	<b>FIGURE 5</b>
SHEET NO.	OF

NRD SETTLEMENT  
SOUTHWEST YARD  
SECTIONS



NO.	DATE	BY	REVISION

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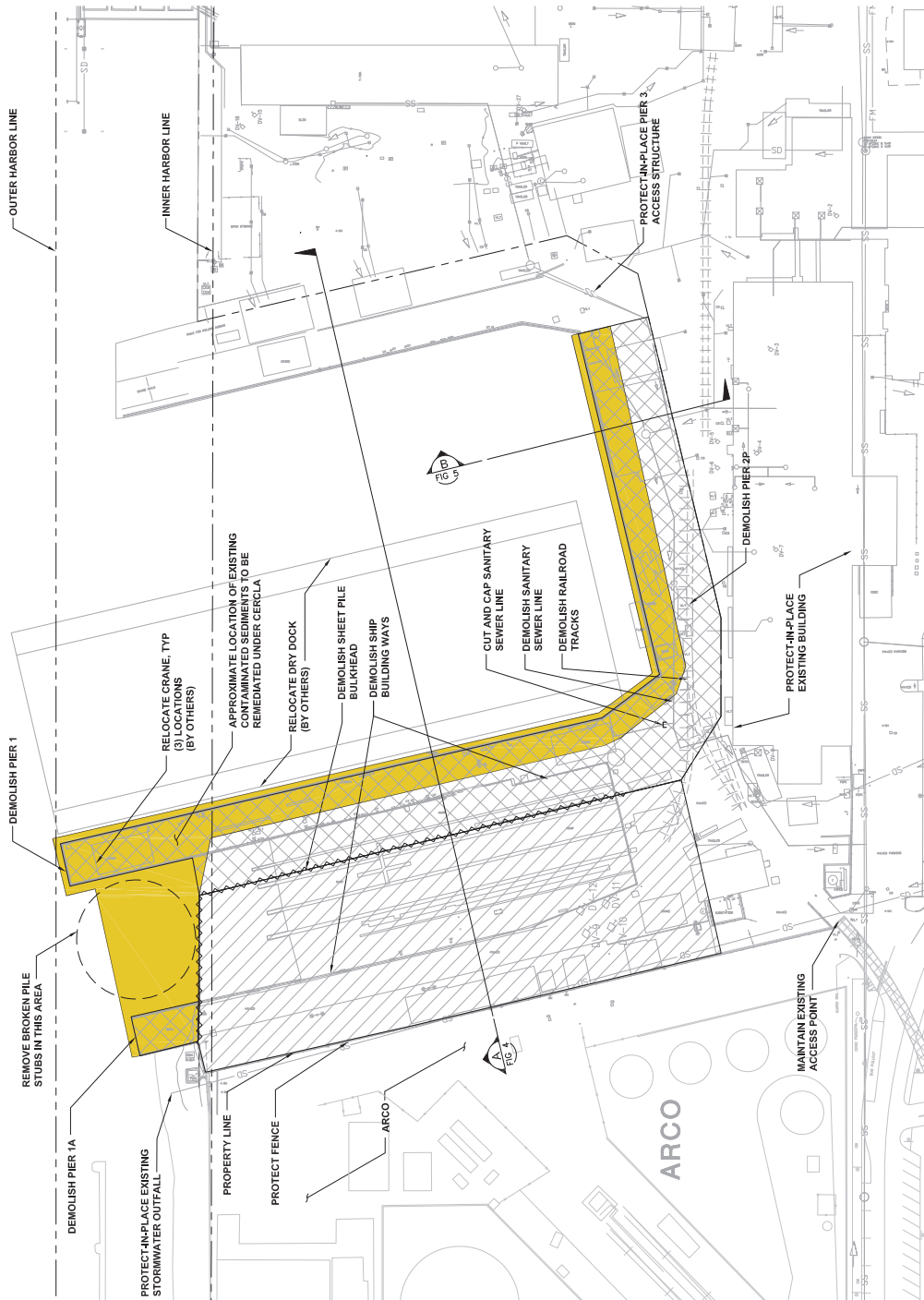
1501 5th Avenue, Suite 1300  
Denver, CO 80202  
303.733.2000 Fax: 303.733.0900

**NOTES:**

1. PRIOR TO DEMOLITION THE OWNER WILL SALVAGE AND RELOCATE ALL UTILITIES. ALL OTHER ITEMS SHALL BE REMOVED AND DISPOSED OF.
2. UTILITIES SHOWN ARE APPROXIMATE IN NATURE AND HAVE BEEN OBTAINED FROM AVAILABLE RECORD DRAWINGS. ALL UTILITIES SHALL BE CUT AND CAPPED AT THE LIMIT OF DEMOLITION.
3. ALL PILES SHALL BE REMOVED COMPLETELY.

**LEGEND:**

-  LANDSIDE STRUCTURE DEMOLITION
-  OVERWATER STRUCTURE DEMOLITION
-  APPROXIMATE LOCATION OF EXISTING CONTAMINATED SEDIMENTS TO BE REMEDIATED UNDER CERCLA



**DEMOLITION PLAN**  
SCALE: 1"=100'



**DRAFT**

DRAWN: JH	PROJECT NO: 111088
DESIGN: SS	SCALE: 1"=100'
CHECKED: BR	DATE: MARCH, 2017
DRAWING NO.	<b>FIGURE 6</b>
SHEET NO.	OF

**NRD SETTLEMENT**  
**SOUTHWEST YARD**  
**DEMOLITION PLAN**



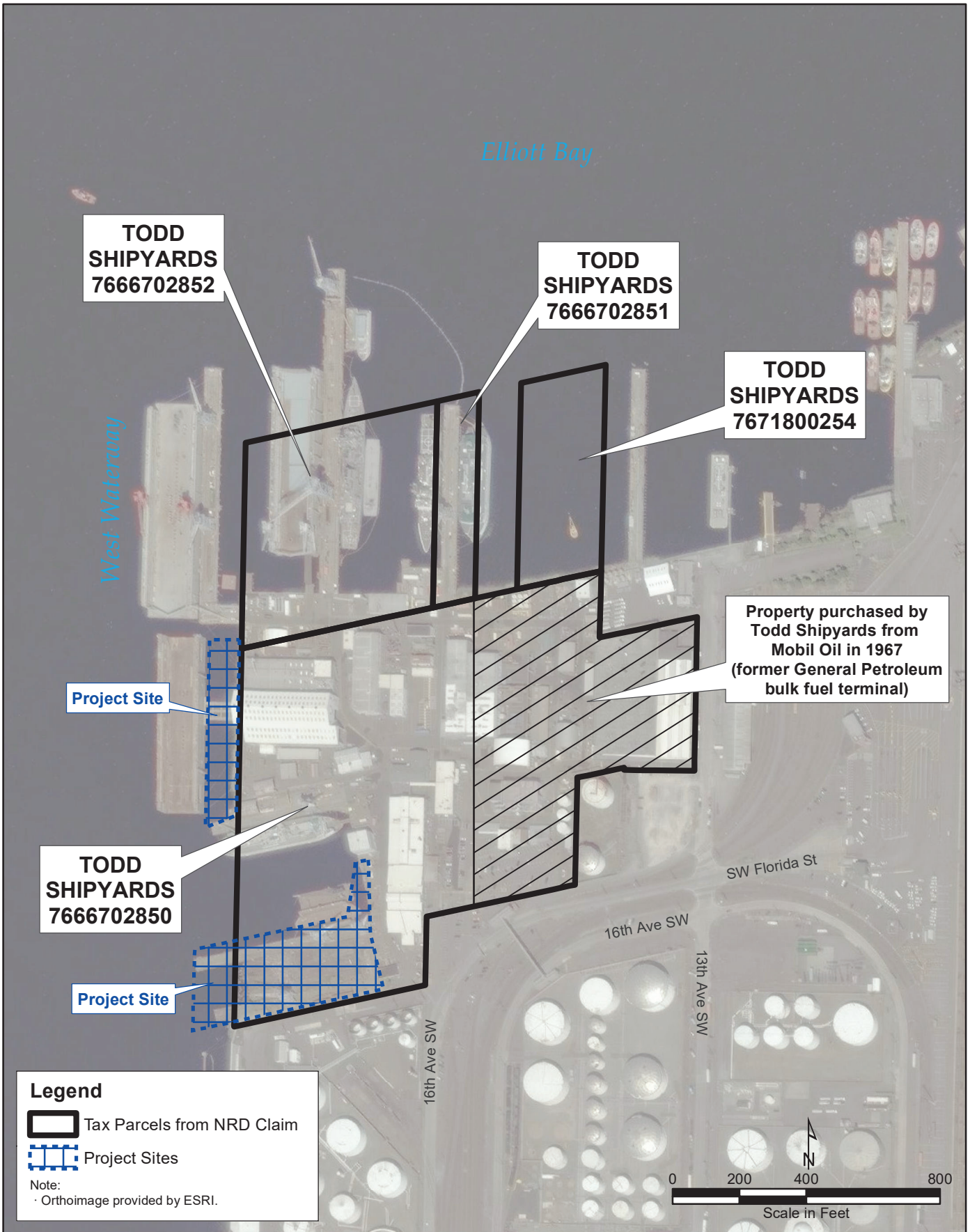
NO.	DATE	BY	REVISION

**FLOYD | SNIDER**  
strategy • science • engineering





## **Attachment B**



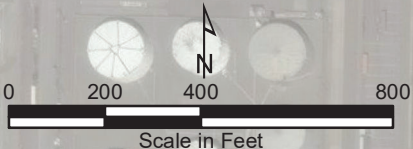


**Legend**

 Tax Parcels from NRD Claim

 Project Sites

Note:  
· Orthoimage provided by ESRI.



**Vigor Shipyards  
Harbor Island, Seattle WA  
NRD Settlement Tax Parcels and Project Sites**

**APPENDIX D  
ESCROW AGREEMENT  
FOR THE VIGOR SHIPYARDS HABITAT PROJECTS**

This Escrow Agreement dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ (the “Escrow Agreement”), is entered into by and among Vigor Industrial LLC, an Oregon limited liability company (“Vigor”), Exxon Mobil Corporation, a \_\_\_\_\_ Corporation (“Exxon Mobil”) (also referred to as the “Performing Parties”), the National Oceanic and Atmospheric Administration (“NOAA”), on behalf of the U.S. Department of Commerce, and Wells Fargo Bank, National Association, a national banking association organized under the laws of the United States, as escrow agent (“Escrow Agent”).

**RECITALS**

- A. Performing Parties and the natural resource trustees who are members of the Elliott Bay Trustee Council, which is comprised of NOAA; the United States Department of the Interior; the Department of Ecology, on behalf of the State of Washington; the Muckleshoot Indian Tribe; and the Suquamish Tribe, are parties to a Consent Decree to which the Escrow Agreement is an Appendix.
- B. Under the Consent Decree, entered between the Performing Parties, the United States, the State of Washington, the Muckleshoot Indian Tribe, and the Suquamish Tribe on [Effective Date] in the Western District of Washington, Performing Parties must provide financial assurance to guarantee the monitoring, maintenance, and long-term stewardship of the Vigor Shipyard Habitat Projects, in accordance with a Scope of Work for the Vigor Shipyards Habitat Projects (“SOW”) to be implemented pursuant to the Consent Decree.
- C. The monitoring, maintenance, and long-term stewardship of the habitat restoration to be guaranteed through the establishment of this Escrow Agreement is detailed in the SOW, hereinafter called the “Guaranteed Work.”
- D. Performing Parties agree to place in escrow certain funds for the Guaranteed Work and the Escrow Agent agrees to hold and distribute such funds in accordance with the terms of this Escrow Agreement.
- E. The Performing Parties and NOAA acknowledge that the Escrow Agent is not a party to, is not bound by, and has no duties or obligations under, the Consent Decree, that all references in this Escrow Agreement to the Consent Decree are for convenience, and that the Escrow Agent shall have no implied duties beyond the express duties set forth in this Escrow Agreement.

In consideration of the promises and agreements of the Performing Parties, NOAA, and Escrow Agent and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Performing Parties, NOAA, and the Escrow Agent agree as follows:

**ARTICLE 1  
ESCROW DEPOSIT**

Section 1.1. Receipt of Escrow Property; Effective Date.

(a) Following execution of this Escrow Agreement, Performing Parties shall deliver to the Escrow Agent the amount of \$300,000.00 (the “Escrow Property”) in immediately available funds for deposit into an escrow account, as described in Section 1.2 (the “Escrow Account”). From time to time, pursuant to the terms of the Consent Decree, additional funds may be delivered by the Performing Parties to Escrow Agent for deposit into the Escrow Account, which funds shall become part of the Escrow Property. Prior to delivery of any additional funds the Performing Parties shall notify the Escrow Agent, in writing, of the amount of additional deposit and date of delivery.

(b) The Effective Date of this Escrow Agreement is the date by which it is executed by the Performing Parties and the funds are deposited with the Escrow Agent.

Section 1.2. Investments.

(a) The Escrow Agent is authorized and directed to deposit, transfer, hold, and invest the Escrow Property and any investment income thereon as set forth in Exhibit A hereto or as set forth in any subsequent written instruction signed by the Performing Parties and NOAA. Any investment earnings and income on the Escrow Property shall become part of the Escrow Property and shall be disbursed in accordance with Section 1.3 or Section 1.6 of this Escrow Agreement.

(b) The Escrow Agent is hereby authorized and directed to sell or redeem any such investments as it deems necessary to make any payments or distributions required under this Escrow Agreement. The Escrow Agent shall have no responsibility or liability for any loss which may result from any investment or sale of investment made pursuant to this Escrow Agreement. The Escrow Agent is hereby authorized, in making or disposing of any investment permitted by this Escrow Agreement, to deal with itself (in its individual capacity) or with any one or more of its affiliates, whether it or any such affiliate is acting as agent of the Escrow Agent or for any third person or dealing as principal for its own account. The Performing Parties and NOAA acknowledge that the Escrow Agent is not providing investment supervision, recommendations, or advice.

(c) The Parties agree that confirmations of permitted investments are not required to be issued by the Escrow Agent for each month in which a monthly statement is rendered. No statement need be rendered for any fund or account if no activity occurred in such fund or account during such month. The Performing Parties and NOAA may obtain confirmations at no additional cost upon written request.

Section 1.3. Disbursements.

(a) In the event NOAA determines, pursuant to the terms of the Consent Decree, that Performing Parties have failed to meet their monitoring, maintenance, or long-term stewardship obligations described in the Consent Decree, including the SOW, NOAA may, in accordance with the terms of the Consent Decree, notify, in writing, the Performing Parties of the deficiencies in the Performing Parties' monitoring, maintenance, or long-term stewardship obligations ("Access to Escrow Notice"). In the event that Performing Parties are unable to cure the deficiencies specified in the Access to Escrow Notice, in accordance with the terms of paragraph 25 of the Consent Decree ("Access to Escrow Account"), NOAA will notify Escrow Agent of such failure (the "Exercise of Access to Escrow Account Notice") and will send a copy to the Performing Parties, in accordance with the notice requirements in Section 4.3. Upon receipt of the Exercise of Access to Escrow Account Notice from NOAA, Escrow Agent shall release such Escrow Property in the Escrow Account that NOAA deems necessary to implement the required monitoring, maintenance, and long-term stewardship obligations to NOAA (into an account to be determined by NOAA). Each Exercise of Access to Escrow Account Notice shall be accompanied by a written instruction executed by an authorized representative of NOAA listed on Exhibit B-1 attached hereto. The Escrow Agent shall disburse Escrow Property from the Escrow Account to NOAA in accordance with the instructions specified in such written instruction, as promptly as practicable, and in no event later than three (3) Business Days after the Escrow Agent's receipt of such written instruction. The Performing Parties are not required to approve or execute any disbursement request under this Section 1.3(a).

(b) From time to time, pursuant to the terms of the Consent Decree, NOAA may submit documentation to Escrow Agent indicating that NOAA has approved a request by Performing Parties to reduce the amount of the Escrow Property in the Escrow Account. Upon receipt of such documentation from NOAA, Escrow Agent shall release such Escrow Property in the approved amount to the Performing Parties (into an account to be determined by the Performing Parties). Each submission of documentation presented pursuant to this Section 1.3(b) shall be accompanied by a joint written instruction executed by an authorized representative on Part I of each Exhibit B-1, Exhibit B-2 and Exhibit B-3 attached hereto. The Escrow Agent shall disburse Escrow Property from the Escrow Account to the designated party or parties in the amount(s) and in accordance with the instructions specified in such joint written instruction, as promptly as practicable, and in no event later than three (3) Business Days after the Escrow Agent's receipt of such joint written instruction. Escrow Agent shall not release any funds in the Escrow Account without written documentation of NOAA's approval.

(c) The Performing Parties agree to deliver an IRS form W-9 or W-8 for any payee(s), if such form has not been previously provided to the Escrow Agent.

Section 1.4. Security Procedure For Funds Transfers. The Escrow Agent shall confirm each funds transfer instruction received from Performing Parties and NOAA by means of the security procedure selected by the Performing Parties and NOAA and communicated to the Escrow Agent through a signed certificate in the form of Exhibit B-1, Exhibit B-2, or Exhibit B-3 attached hereto, which upon receipt by the Escrow Agent shall become a part of this Escrow

Agreement. Once delivered to the Escrow Agent, Exhibit B-1, Exhibit B-2, or Exhibit B-3 may be revised or rescinded only by a writing signed by an authorized representative of the Performing Parties and NOAA. Such revisions or rescissions shall be effective only after actual receipt and following such period of time as may be necessary to afford the Escrow Agent a reasonable opportunity to act on it. If a revised Exhibit B-1, B-2, or B-3 or a rescission of an existing Exhibit B-1, B-2, or B-3 is delivered to the Escrow Agent by an entity that is a successor-in-interest to a Performing Party or NOAA, such document shall be accompanied by additional documentation satisfactory to the Escrow Agent showing that such entity has succeeded to the rights and responsibilities of a Performing Party or NOAA under this Escrow Agreement.

The Performing Parties and NOAA understand that the Escrow Agent's inability to receive or confirm funds transfer instructions pursuant to the security procedure selected by the Performing Parties and NOAA may result in a delay in accomplishing such funds transfer, and agree that the Escrow Agent shall not be liable for any loss caused by any such delay.

Section 1.5. Income Tax Allocation and Reporting.

(a) The Performing Parties agree that, for tax reporting purposes, all interest and other income from investment of the Escrow Property shall, as of the end of each calendar year and to the extent required by the Internal Revenue Service, be reported as having been earned by Vigor, whether or not such income was disbursed during such calendar year.

(b) For certain payments made pursuant to Section 1.3(b) of this Escrow Agreement, the Escrow Agent may be required to make a "reportable payment" or "withholdable payment" and in such cases the Escrow Agent shall have the duty to act as a payor or withholding agent, respectively, that is responsible for any tax withholding and reporting required under Chapters 3, 4, and 61 of the United States Internal Revenue Code of 1986, as amended (the "Code"). The Escrow Agent shall have the sole right to make the determination as to which payments are "reportable payments" or "withholdable payments." Vigor shall provide an executed IRS Form W-9 or appropriate IRS Form W-8 (or, in each case, any successor form) to the Escrow Agent prior to the date hereof, and shall promptly update any such form to the extent such form becomes obsolete or inaccurate in any respect. The Escrow Agent shall have the right to request from any party to this Escrow Agreement, or any other person or entity entitled to payment hereunder, any additional forms, documentation or other information as may be reasonably necessary for the Escrow Agent to satisfy its reporting and withholding obligations under the Code. To the extent any such forms to be delivered under this Section 1.5(b) are not provided prior to the date hereof or by the time the related payment is required to be made or are determined by the Escrow Agent to be incomplete, inaccurate, or both, the Escrow Agent shall be entitled to withhold (without liability) a portion of any interest or other income earned on the investment of the Escrow Property or on any such payments hereunder to the extent withholding is required under Chapters 3, 4, or 61 of the Code, and shall have no obligation to gross up any such payment. This Section does not apply to any payments pursuant to Section 1.3(a).

(c) To the extent that the Escrow Agent becomes liable for the payment of any taxes in respect of income derived from the investment of the Escrow Property, the Escrow Agent shall

satisfy such liability to the extent possible from the Escrow Property. The Performing Parties, jointly and severally, shall indemnify, defend, and hold the Escrow Agent harmless from and against any tax, late payment, interest, penalty or other cost or expense that may be assessed against the Escrow Agent on or with respect to the Escrow Property and the investment thereof, unless such tax, late payment, interest, penalty or other expense was directly caused by the gross negligence or willful misconduct of the Escrow Agent. The indemnification provided by this Section 1.5(c) is in addition to the indemnification provided in Section 3.1 and shall survive the resignation or removal of the Escrow Agent and the termination of this Escrow Agreement.

(d) The Performing Parties and NOAA acknowledge that, in order to help fight the funding of terrorism and money laundering activities, Federal law requires all financial institutions to obtain, verify and record information that identifies each person or corporation who opens an account or enters into a business relationship. The Performing Parties and NOAA hereby agree that they shall provide the Escrow Agent with such information as the Escrow Agent may request including, but not limited to, each party's name, physical address, tax identification number (if applicable) and other information that will assist the Escrow Agent in identifying and verifying each party's identity, such as organizational documents, certificates of good standing, licenses to do business, or other pertinent identifying information.

Section 1.6. Termination. The anticipated term of this Escrow Agreement is from the Effective Date until 35 years later, in accordance with Section VII (Restoration Projects) of the Consent Decree. The Escrow Agreement may only be terminated in accordance with the requirements of Paragraph 26 (Release, Cancellation, or Discontinuation of the Escrow Account) of the Consent Decree. At the end of the term of this Escrow Agreement, as provided in Paragraph 26 of the Consent Decree, the Performing Parties may request, with written approval by NOAA, that the remaining Escrow Property be released to the Performing Parties. Provided, however that if both of the Performing Parties cease to be in existence, prior to or upon the anticipated termination date, then NOAA may direct the Escrow Agent to terminate the Escrow Account in accordance with the Consent Decree and pay the remaining Escrow Property to NOAA.

Section 1.7. Administration.

(a) Escrow Agent shall prepare quarterly account statements describing the manner in which the Escrow Property is invested and the current market value of the Escrow Property, as well as income, and expenses of the Escrow Account. Copies of quarterly account statements shall be transmitted electronically to the Performing Parties and NOAA.

(b) Escrow Agent shall prepare annual account statements describing the manner in which the Escrow Property is invested and the current market value of the Escrow Property, as well as income, and expenses of the Escrow Account. Copies of annual account statements shall be transmitted electronically to the Performing Parties and NOAA.

(c) The Parties may obtain confirmations at no additional cost upon any party's written request.

(d) Escrow Agent shall advise, consult, and confer with and otherwise inform the Performing Parties and NOAA as to matters arising out of this Escrow Agreement, administration of the Escrow Account, or any other matter that the Escrow Agent, in its discretion, deems appropriate to bring to their attention.

(e) Escrow Agent shall maintain and preserve, consistent with generally accepted industry standards, records of all actions taken by Escrow Agent as to matters arising out of this Escrow Agreement, administration of the Escrow Account, and Escrow Agent's performance of services under this Escrow Agreement. Escrow Agent shall provide electronic copies of such reasonable records to the Performing Parties or NOAA upon request.

## **ARTICLE 2 DUTIES OF THE ESCROW AGENT**

Section 2.1. Scope of Responsibility. Notwithstanding any provision to the contrary, the Escrow Agent is obligated only to perform the duties specifically set forth in this Escrow Agreement, which shall be deemed purely ministerial in nature. Under no circumstance will the Escrow Agent be deemed to be a fiduciary to any party or any other person under this Escrow Agreement. The Escrow Agent will not be responsible or liable for the failure of any party to perform in accordance with this Escrow Agreement. The Escrow Agent shall neither be responsible for, nor chargeable with, knowledge of the terms and conditions of any other agreement, instrument, or document other than this Escrow Agreement, whether or not an original or a copy of such agreement has been provided to the Escrow Agent; and the Escrow Agent shall have no duty to know or inquire as to the performance or nonperformance of any provision of any such agreement, instrument, or document. References in this Escrow Agreement to any other agreement, instrument, or document are for the convenience of the Performing Parties and NOAA, and the Escrow Agent has no duties or obligations with respect thereto. The Escrow Agent will not be responsible to determine or to make inquiry into any term, capitalized or otherwise, not defined herein. This Escrow Agreement sets forth all matters pertinent to the escrow contemplated hereunder, and no additional obligations of the Escrow Agent shall be inferred or implied from the terms of this Escrow Agreement or any other agreement.

Section 2.2. Attorneys and Agents. The Escrow Agent shall be entitled to rely on and shall not be liable for any action taken or omitted to be taken by the Escrow Agent in accordance with the advice of counsel or other professionals retained or consulted by the Escrow Agent. The Escrow Agent shall be reimbursed as set forth in Section 3.4 for any and all compensation (fees, expenses and other costs) paid or reimbursed to such counsel or professionals. The Escrow Agent may perform any and all of its duties through its agents, representatives, attorneys, custodians, or nominees. The Escrow Agent shall not be responsible for the conduct of agents or attorneys appointed by it with due care.

Section 2.3. Reliance. The Escrow Agent shall not be liable for any action taken or not taken by it in accordance with the direction or consent of the Performing Parties, NOAA, or their respective agents, representatives, successors, or assigns. The Escrow Agent shall not be liable

for acting or refraining from acting upon any notice, request, consent, direction, requisition, certificate, order, affidavit, letter, or other paper or document believed by it to be genuine and correct and to have been signed or sent by the proper person or persons, without further inquiry into the person's or persons' authority. Concurrent with the execution of this Escrow Agreement, the Parties shall deliver to the Escrow Agent Exhibit B-1, Exhibit B-2, and Exhibit B-3, which contain authorized signer designations in Part I thereof. The Performing Parties and NOAA represent and warrant that each person signing this Escrow Agreement is duly authorized and has legal capacity to execute and deliver this Escrow Agreement, along with each exhibit, agreement, document, and instrument to be executed and delivered by the Performing Parties and NOAA.

Section 2.4. Right Not Duty Undertaken. The permissive rights of the Escrow Agent to do things enumerated in this Escrow Agreement shall not be construed as duties.

Section 2.5. No Financial Obligation. No provision of this Escrow Agreement shall require the Escrow Agent to risk or advance its own funds or otherwise incur any financial liability or potential financial liability in the performance of its duties or the exercise of its rights under this Escrow Agreement.

### **ARTICLE 3 PROVISIONS CONCERNING THE ESCROW AGENT**

Section 3.1. Indemnification. The Performing Parties, jointly and severally, shall indemnify, defend and hold harmless the Escrow Agent from and against any and all loss, liability, cost, damage, and expense, including, without limitation, attorneys' fees and expenses or other professional fees and expenses which the Escrow Agent may suffer or incur by reason of any action, claim, or proceeding brought against the Escrow Agent, arising out of or relating in any way to this Escrow Agreement or any transaction to which this Escrow Agreement relates, unless such loss, liability, cost, damage or expense shall have been finally adjudicated to have been directly caused by the willful misconduct or gross negligence of the Escrow Agent. The provisions of this Section 3.1 shall survive the resignation or removal of the Escrow Agent and the termination of this Escrow Agreement.

Section 3.2. Limitation of Liability. THE ESCROW AGENT SHALL NOT BE LIABLE, DIRECTLY OR INDIRECTLY, FOR ANY (I) DAMAGES, LOSSES, OR EXPENSES ARISING OUT OF THE SERVICES PROVIDED HEREUNDER, OTHER THAN DAMAGES, LOSSES, OR EXPENSES WHICH HAVE BEEN FINALLY ADJUDICATED TO HAVE DIRECTLY RESULTED FROM THE ESCROW AGENT'S GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, OR (II) SPECIAL, INDIRECT, PUNITIVE, OR CONSEQUENTIAL DAMAGES OR LOSSES OF ANY KIND WHATSOEVER (INCLUDING WITHOUT LIMITATION LOST PROFITS), EVEN IF THE ESCROW AGENT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES AND REGARDLESS OF THE FORM OF ACTION.

Section 3.3. Resignation or Removal. The Escrow Agent may resign by furnishing written notice of its resignation to the Performing Parties and NOAA. In accordance with Paragraph 24 of the Consent Decree, the Performing Parties may only remove and replace the Escrow Agent



with the approval of NOAA. The Performing Parties and NOAA may remove the Escrow Agent by furnishing to the Escrow Agent a joint written notice of such removal, along with payment by Performing Parties of all fees and expenses to which the Escrow Agent is entitled through the date of removal. Such resignation or removal, as the case may be, shall be effective ninety (90) calendar days after the delivery of such notice or upon the earlier appointment of a successor, and the Escrow Agent's sole responsibility thereafter shall be to safely keep the Escrow Property and to deliver the same to NOAA or to a successor escrow agent as shall be appointed by the Performing Parties and NOAA, as evidenced by a joint written notice filed with the Escrow Agent or in accordance with a court order. If the Performing Parties have failed to appoint, with approval of NOAA, a successor escrow agent prior to the expiration of ninety (90) calendar days following the delivery of such notice of resignation or removal, the Escrow Agent shall pay the full Escrow Property to NOAA in accordance with Paragraph 25 of the Consent Decree.

Section 3.4. Compensation. The Escrow Agent shall be entitled to compensation for its services as stated in the fee schedule attached hereto as Exhibit C, which compensation shall be paid by Vigor. The fee agreed upon for the services rendered hereunder is intended as full compensation for the Escrow Agent's services as contemplated by this Escrow Agreement; provided, however, that in the event that the conditions for the disbursement of funds under this Escrow Agreement are not fulfilled, or the Escrow Agent renders any service not contemplated in this Escrow Agreement, or there is any assignment of interest in the subject matter of this Escrow Agreement, or any material modification hereof, or if any material controversy arises hereunder, or the Escrow Agent is made a party to any litigation pertaining to this Escrow Agreement or the subject matter hereof, then the Escrow Agent shall be compensated for such extraordinary services and reimbursed for all reasonable costs and expenses, including reasonable attorneys' fees and expenses, occasioned by any such delay, controversy, litigation or event, which compensation, costs and expenses shall be paid by the Performing Parties. If any amount due to the Escrow Agent hereunder is not paid within thirty (30) calendar days of the date due, the Escrow Agent in its sole discretion may charge interest on such amount up to the highest rate permitted by applicable law.

Section 3.5. Disagreements. If any conflict, disagreement, or dispute arises between, among, or involving any of the parties hereto concerning the meaning or validity of any provision hereunder or concerning any other matter relating to this Escrow Agreement, such conflict, disagreement or dispute shall be resolved pursuant to the terms of the Consent Decree and in accordance with Section 4.4 below. This Section and Section 4.4 do not apply to any written instructions for disbursements submitted by NOAA pursuant to Section 1.3(a). The Escrow Agent shall honor all such written instructions for disbursement submitted by NOAA pursuant to Section 1.3(a) regardless of any disputes between NOAA and Performing Parties.

Section 3.6 Merger or Consolidation. Any corporation or association into which the Escrow Agent may be converted or merged, or with which it may be consolidated, or to which it may sell or transfer all or substantially all of its corporate trust business and assets as a whole or substantially as a whole, or any corporation or association resulting from any such conversion, sale, merger, consolidation or transfer to which the Escrow Agent is a party, shall be and become the successor escrow agent under this Escrow Agreement and shall have and succeed to the

rights, powers, duties, immunities and privileges as its predecessor, without the execution or filing of any instrument or paper or the performance of any further act.

Section 3.7. Notification by Escrow Agent of Claims and Legal Orders. In the event the Escrow Agent receives notice of any claim by any party or order of a court regarding the Escrow Property, the Escrow Agent shall notify the Performing Parties and NOAA of such claim or order within 14 days of receipt of the notice.

Section 3.8 Force Majeure. The Escrow Agent shall not be responsible or liable for any failure or delay in the performance of its obligation under this Escrow Agreement arising out of or caused, directly or indirectly, by circumstances beyond its reasonable control, including, without limitation, acts of God; earthquakes; fire; flood; wars; acts of terrorism; civil or military disturbances; sabotage; epidemic; riots; interruptions, loss or malfunctions of utilities, computer (hardware or software) or communications services; accidents; labor disputes; acts of civil or military authority or governmental action; it being understood that the Escrow Agent shall use commercially reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as reasonably practicable under the circumstances.

#### **ARTICLE 4 MISCELLANEOUS**

Section 4.1. Binding Agreement, Successors and Assigns. The Performing Parties, NOAA, and Escrow Agent represent and warrant that the execution and delivery of this Escrow Agreement and the performance of each party's obligations hereunder have been duly authorized and that the Escrow Agreement is a valid and legal agreement binding on each party and enforceable in accordance with its terms. This Escrow Agreement shall be binding on and inure to the benefit of the Performing Parties, NOAA, and the Escrow Agent and their respective successors and permitted assigns. No other persons shall have any rights under this Escrow Agreement. No assignment of the interest of any of the Performing Parties or NOAA shall be binding unless and until written notice of such assignment shall be delivered to the other parties and the Escrow Agent, and shall require the prior written consent of the other parties and the Escrow Agent (such consent not to be unreasonably withheld, conditioned, or delayed).

Section 4.2. Abandonment of Escrow Property by the Performing Parties. If the Performing Parties are no longer in existence, or if the Performing Parties are presumed to have abandoned this account, the remaining Escrow Property shall be paid in full to NOAA. In no event shall the Escrow Property be considered to be abandoned by NOAA or its successor.

Section 4.3. Notices. All notices, requests, demands, and other communications required under this Escrow Agreement shall be in writing, in English, and shall be deemed to have been duly given if delivered (i) personally, (ii) by facsimile transmission with written confirmation of receipt, (iii) on the day of transmission if sent by electronic mail ("e-mail", as long as such e-mail is accompanied by a PDF signature or similar version of the relevant document bearing an authorized signature, which such signature shall, in the case of each of the parties, be a signature set forth in Exhibit B-1, B-2, or B-3, as applicable) to the e-mail address given below, and written confirmation of receipt is obtained promptly after completion of transmission, (iv) by

overnight delivery with a reputable national overnight delivery service, or (v) by mail or by certified mail, return receipt requested, and postage prepaid. If any notice is mailed, it shall be deemed given five (5) Business Days after the date such notice is deposited in the United States mail. For the purpose of this Escrow Agreement, "Business Day" shall mean any day other than a Saturday, a Sunday, a federal or state holiday, and any other day on which the Escrow Agent is closed. If notice is given to a party, it shall be given at the address for such party set forth below. It shall be the responsibility of the Performing Parties and NOAA to notify the Escrow Agent and the other parties in writing of any name or address changes. In the case of communications delivered to the Escrow Agent, such communications shall be deemed to have been given on the date received by the Escrow Agent.

If to Vigor:

Vigor Industrial LLC  
5555 North Channel Ave.  
Portland, Oregon 97217  
Attention: General Counsel  
Telephone: 503-247-1833  
E-mail: Tae.Rhee@Vigor.net

If to Exxon Mobil:

Exxon Mobil Corporation  
22777 Springwoods Village Pkwy (E2 3B 508)  
Spring, Texas 77389  
Attention:  
Telephone:  
Facsimile:  
E-mail:

If to NOAA:

National Oceanic and Atmospheric Administration  
7600 Sand Point Way NE, Building 1  
Seattle, Washington 98115-6349  
Attn: Marla Steinhoff  
Telephone: 206-526-6341  
Facsimile: 206-526-6665  
E-mail: marla.steinhoff@noaa.gov

If to the Escrow Agent:

Wells Fargo Bank, National Association  
Corporate Trust Services  
171 17<sup>th</sup> Street NW, 3<sup>rd</sup> Floor  
Atlanta, GA 30363

Attention: Patrick St. Fleur  
Telephone: 404-214-6338  
Facsimile: 866-486-43898  
E-mail: patrick.stfleur@wellsfargo.com

Section 4.4. Governing Law; Jurisdiction. This Escrow Agreement shall be governed by and construed in accordance with the laws of the State of Washington. Any proceeding that may arise under this Escrow Agreement must be instituted in the U.S. District Court for the Western District of Washington in which the Consent Decree requiring performance of the Guaranteed Work is entered.

Section 4.5. Cooperation. The parties to this Escrow Agreement agree that they shall facilitate in good faith, the effectuation of this Escrow Agreement.

Section 4.6 Entire Agreement. This Escrow Agreement and the exhibits hereto set forth the entire agreement and understanding of the parties related to the Escrow Property. Notwithstanding the foregoing, in the event of any inconsistency between the statements in the body of this Escrow Agreement and those of the Consent Decree, (a) with respect to any inconsistency as between Performing Parties and NOAA, the statements in the body of the Consent Decree shall control; and (b) with respect to any inconsistency as between the Escrow Agent, on the one hand, and either Performing Parties or NOAA or both, on the other hand, the statements in the body of this Escrow Agreement shall control.

Section 4.7. Amendment. This Escrow Agreement may be amended, modified, superseded, rescinded, or canceled only by a written instrument executed by the Performing Parties, NOAA, and the Escrow Agent.

Section 4.8. Waivers. The failure of any party to this Escrow Agreement at any time or times to require performance of any provision under this Escrow Agreement shall in no manner affect the right at a later time to enforce the same performance. A waiver by any party to this Escrow Agreement of any such condition or breach of any term, covenant, representation, or warranty contained in this Escrow Agreement, in any one or more instances, shall neither be construed as a further or continuing waiver of any such condition or breach nor a waiver of any other condition or breach of any other term, covenant, representation, or warranty contained in this Escrow Agreement.

Section 4.9. Headings. Section headings of this Escrow Agreement have been inserted for convenience of reference only and shall in no way restrict or otherwise modify any of the terms or provisions of this Escrow Agreement.

Section 4.10. Counterparts. This Escrow Agreement may be executed in one or more counterparts, each of which when executed shall be deemed to be an original, and such counterparts shall together constitute one and the same instrument. The exchange of copies of this Escrow Agreement and of signature pages by facsimile or by electronic image scan

transmission in pdf format shall constitute effective execution and delivery of this Escrow Agreement as to the Performing Parties, NOAA, and the Escrow Agent and may be used in lieu of the original Escrow Agreement for all purposes.

Section 4.11. Trial by Jury. Each of the parties to this Escrow Agreement hereby irrevocably waives all right to trial by jury to the extent permitted by law in any litigation, action, proceeding in any court arising out of, relating to, or in connection with this Escrow Agreement.

Section 4.12. Publication; Disclosure. By executing this Escrow Agreement, the Performing Parties and the Escrow Agent acknowledge that this Escrow Agreement (including related attachments) will be published as an attachment to the Consent Decree. The Performing Parties and NOAA agree to redact the manual signatures of the signatories to this Escrow Agreement, and any wiring or account number information, prior to publication.

Section 4.13. Interests not Assignable or Subject to Claims of Creditors. The interest of any party in the Escrow Property shall not be subject to attachment or assignment or be subject to the claims of any creditor of the Performing Parties, and any interest reserved to the Performing Parties shall be made available to the Performing Parties only upon termination of this Agreement.

Section 4.14. No Third Party Beneficiaries. The parties to this Escrow Agreement do not intend, and nothing in this Escrow Agreement shall be construed to mean, that any provision in this Escrow Agreement is for the benefit of any person or entity who is not a party to the Escrow Agreement.

Section 4.15. Independent Legal Advice and Investigation. In entering into this Escrow Agreement, the parties to the Escrow Agreement acknowledge that they have received independent legal advice from their own counsel and have relied on their own investigation and upon the advice of their own attorneys with respect to the terms provided in this Escrow Agreement.

Section 4.16. Modifications of Guaranteed Work. Performing Parties and NOAA recognize that the Guaranteed Work may be modified, revised, or amended in accordance with the terms of the Consent Decree and that such changes will not affect the terms and conditions of this Escrow Agreement.

[The remainder of this page left intentionally blank.]

IN WITNESS WHEREOF, this Escrow Agreement has been duly executed as of the date first written above.

**Vigor Industrial LLC**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Exxon Mobil Corporation**

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**National Oceanic and Atmospheric Administration**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**WELLS FARGO BANK, NATIONAL ASSOCIATION, as Escrow Agent**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

EXHIBIT A**Agency and Custody Account Direction  
For Cash Balances**

Direction to use money market funds for cash balances for the following account(s) and all subaccounts thereof:

Account name:	<b>Vigor Industrial LLC, / Exxon Mobil Corporation / NOAA Escrow Account</b>
Account number(s):	

Wells Fargo Bank, N.A. or its affiliates, as applicable (Wells Fargo or Escrow Agent), is hereby directed, or as the Performing Parties and NOAA shall direct further from time to time in writing, to invest all cash held in the above referenced account in one of the money market funds (the fund) on the following page (please check one) or another permitted investment.

The Performing Parties and NOAA acknowledge that they have received and reviewed the fund's prospectus and have determined that the fund is an appropriate investment for the account.

The Performing Parties and NOAA understand that Escrow Agent will not exclude amounts invested in the fund from assets in the account that are subject to fees under any agreement between the parties.

The Performing Parties and NOAA understand that fund shares are *not* deposits or other obligations of, or guaranteed by, Wells Fargo Fund shares are not insured or guaranteed by the U.S. Government, the Federal Deposit Insurance Corporation or any other government agency and may lose value.

The Performing Parties and NOAA acknowledge that they have full power and authority to direct investments of the account listed above.

The Performing Parties understand that they may change this direction at any time and that it shall continue in effect until revoked or modified by the Performing Parties and NOAA by written notice to Wells Fargo. The Performing Parties and NOAA also understand that if they choose to communicate this investment direction solely via facsimile or email, then the investment direction will be understood to be enforceable and binding.

Company or issuer: Vigor Industrial LLC	Address: 5555 North Channel Ave., Portland, Oregon 97217
Authorized representative (sign):	Authorized representative (print name):
Date:	

Company or issuer: Exxon Mobil Corporation	Address:
Authorized representative (sign):	Authorized representative (print name):

Date:

Company or issuer: National Oceanic and Atmospheric Administration (NOAA)	Address:
Authorized representative (sign):	Authorized representative (print name):

Date:

Selection	Fund Name	Fund Number
<input checked="" type="checkbox"/>	Wells Fargo 100% Treasury MMF	008
<input type="checkbox"/>	Dreyfus Treasury Securities Cash MMF	674 (100% Treasury)
<input type="checkbox"/>	Federated U.S. Treasury Cash Reserve MMF	632 (100% Treasury)

\*(Funds above are service class or investor class)

***Fund shares are not deposits or other obligations of, or guaranteed by. Wells Fargo Bank, N.A., its affiliates or any other depository institution. Fund shares are not insured or guaranteed by the U.S. Government, the Federal Deposit Insurance Corporation or any other government agency and may lose value.***

The Performing Parties and NOAA understand from reading the Wells Fargo Advantage Funds prospectus that Wells Fargo Funds Management, LLC, a wholly-owned subsidiary of Wells Fargo & Company, provides investment advisory and other administrative services for the Wells Fargo funds (the funds). Other affiliates of Wells Fargo & Company may provide subadvisory and other services for the funds. The funds are distributed by Wells Fargo Funds Distributor, LLC,

**Full prospectus and information for each investment election**

[Wells Fargo Funds](#)

[Federated Money Market Funds](#)

[Dreyfus Money Market Funds](#)



member FINRA or SIPC, an affiliate of Wells Fargo & Company. The Performing Parties also understand that these and other affiliates of Wells Fargo & Company may be compensated for services provided to the funds as described in the prospectus for the funds.

EXHIBIT B-1

National Oceanic and Atmospheric Administration (“NOAA”) certifies that the names, titles, telephone numbers, e-mail addresses and specimen signatures set forth in Parts I and II of this Exhibit B-1 identify the persons authorized to provide direction and initiate or confirm transactions, including funds transfer instructions, on behalf of NOAA, and that the option checked in Part III of this Exhibit B-1 is the security procedure selected by NOAA for use in verifying that a funds transfer instruction received by the Escrow Agent is that of NOAA .

NOAA has reviewed each of the security procedures and has determined that the option checked in Part III of this Exhibit B-1 best meets its requirements; given the size, type and frequency of the instructions it will issue to the Escrow Agent. By selecting the security procedure specified in Part III of this Exhibit B-1, NOAA acknowledges that it has elected to not use the other security procedures described and agrees to be bound by any funds transfer instruction, whether or not authorized, issued in its name and accepted by the Escrow Agent in compliance with the particular security procedure chosen by NOAA.

NOTICE: The security procedure selected by NOAA will not be used to detect errors in the funds transfer instructions given by NOAA. If a funds transfer instruction describes the beneficiary of the payment inconsistently by name and account number, payment may be made on the basis of the account number even if it identifies a person different from the named beneficiary. If a funds transfer instruction describes a participating financial institution inconsistently by name and identification number, the identification number may be relied upon as the proper identification of the financial institution. Therefore, it is important that NOAA take such steps as it deems prudent to ensure that there are no such inconsistencies in the funds transfer instructions it sends to the Escrow Agent.

**Part I**

**Name, Title, Telephone Number, Electronic Mail (“e-mail”) Address and Specimen Signature for person(s) designated to provide direction, including but not limited to funds transfer instructions, and to otherwise act on behalf of NOAA**

<u>Name</u>	<u>Title</u>	<u>Telephone Number</u>	<u>E-mail Address</u>	<u>Specimen Signature</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**Part II**

**Name, Title, Telephone Number and E-mail Address for person(s) designated to confirm funds transfer instructions**

<u>Name</u>	<u>Title</u>	<u>Telephone Number</u>	<u>E-mail Address</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Part III**

**Means for delivery of instructions and/or confirmations**

The security procedure to be used with respect to funds transfer instructions is checked below:

- Option 1. Confirmation by telephone call-back. The Escrow Agent shall confirm funds transfer instructions by telephone call-back to a person at the telephone number designated on Part II above. The person confirming the funds transfer instruction shall be a person other than the person from whom the funds transfer instruction was received, unless only one person is designated in both Parts I and II of this Exhibit B-1.
- CHECK box, if applicable:  
If the Escrow Agent is unable to obtain confirmation by telephone call-back, the Escrow Agent may, at its discretion, confirm by e-mail, as described in Option 2.
- Option 2. Confirmation by e-mail. The Escrow Agent shall confirm funds transfer instructions by e-mail to a person at the e-mail address specified for such person in Part II of this Exhibit B-1. The person confirming the funds transfer instruction shall be a person other than the person from whom the funds transfer instruction was received, unless only one person is designated in both Parts I and II of this Exhibit B-1. [“\_\_\_\_\_”] understands the risks associated with communicating sensitive matters, including time sensitive matters, by e-mail. [“\_\_\_\_\_”] further acknowledges that instructions and data sent by e-mail may be less confidential or secure than instructions or data transmitted by other methods. The Escrow Agent shall not be liable for any loss of the confidentiality of instructions and data prior to receipt by the Escrow Agent.
- CHECK box, if applicable:  
If the Escrow Agent is unable to obtain confirmation by e-mail, the Escrow Agent may, at its discretion, confirm by telephone call-back, as described in Option 1.
- \*Option 3. Delivery of funds transfer instructions by password protected file transfer system only - no confirmation. The Escrow Agent offers the option to deliver funds transfer instructions through a password protected file transfer system. If [“\_\_\_\_\_”] wishes to use the password protected file transfer system, further instructions will be provided by the Escrow Agent. If [“\_\_\_\_\_”] chooses this Option 3, it agrees that no further confirmation of funds transfer instructions will be performed by the Escrow Agent.
- \*Option 4. Delivery of funds transfer instructions by password protected file transfer system with confirmation. Same as Option 3 above, but the Escrow Agent shall confirm funds transfer instructions by  telephone call-back or  e-mail (must check at least one, may check both) to a person at the telephone number or e-mail address designated on Part II above. By checking a box in the prior sentence, the party shall be deemed to have agreed to the terms of such confirmation option as more fully described in Option 1 and Option 2 above.

*\*The password protected file system has a password that expires every 60 days. If you anticipate having infrequent activity on this account, please consult with your Escrow Agent before selecting this option.*

**Dated this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.**

**By \_\_\_\_\_**

**Name:**

**Title:**

EXHIBIT B-2

["\_\_\_\_\_"] certifies that the names, titles, telephone numbers, e-mail addresses and specimen signatures set forth in Parts I and II of this Exhibit B-2 identify the persons authorized to provide direction and initiate or confirm transactions, including funds transfer instructions, on behalf of ["\_\_\_\_\_"], and that the option checked in Part III of this Exhibit B-2 is the security procedure selected by ["\_\_\_\_\_"] for use in verifying that a funds transfer instruction received by the Escrow Agent is that of ["\_\_\_\_\_"].

["\_\_\_\_\_"] has reviewed each of the security procedures and has determined that the option checked in Part III of this Exhibit B-2 best meets its requirements; given the size, type and frequency of the instructions it will issue to the Escrow Agent. By selecting the security procedure specified in Part III of this Exhibit B-2, ["\_\_\_\_\_"] acknowledges that it has elected to not use the other security procedures described and agrees to be bound by any funds transfer instruction, whether or not authorized, issued in its name and accepted by the Escrow Agent in compliance with the particular security procedure chosen by ["\_\_\_\_\_"].

**NOTICE:** The security procedure selected by ["\_\_\_\_\_"] will not be used to detect errors in the funds transfer instructions given by ["\_\_\_\_\_"]. If a funds transfer instruction describes the beneficiary of the payment inconsistently by name and account number, payment may be made on the basis of the account number even if it identifies a person different from the named beneficiary. If a funds transfer instruction describes a participating financial institution inconsistently by name and identification number, the identification number may be relied upon as the proper identification of the financial institution. Therefore, it is important that ["\_\_\_\_\_"] take such steps as it deems prudent to ensure that there are no such inconsistencies in the funds transfer instructions it sends to the Escrow Agent.

**Part I**

**Name, Title, Telephone Number, Electronic Mail ("e-mail") Address and Specimen Signature for person(s) designated to provide direction, including but not limited to funds transfer instructions, and to otherwise act on behalf of ["\_\_\_\_\_"]**

<u>Name</u>	<u>Title</u>	<u>Telephone Number</u>	<u>E-mail Address</u>	<u>Specimen Signature</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**Part II**

**Name, Title, Telephone Number and E-mail Address for person(s) designated to confirm funds transfer instructions**

<u>Name</u>	<u>Title</u>	<u>Telephone Number</u>	<u>E-mail Address</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Part III

**Means for delivery of instructions and/or confirmations**

The security procedure to be used with respect to funds transfer instructions is checked below:

Option 1. Confirmation by telephone call-back. The Escrow Agent shall confirm funds transfer instructions by telephone call-back to a person at the telephone number designated on Part II above. The person confirming the funds transfer instruction shall be a person other than the person from whom the funds transfer instruction was received, unless only one person is designated in both Parts I and II of this Exhibit B-2.

CHECK box, if applicable:  
If the Escrow Agent is unable to obtain confirmation by telephone call-back, the Escrow Agent may, at its discretion, confirm by e-mail, as described in Option 2.

Option 2. Confirmation by e-mail. The Escrow Agent shall confirm funds transfer instructions by e-mail to a person at the e-mail address specified for such person in Part II of this Exhibit B-2. The person confirming the funds transfer instruction shall be a person other than the person from whom the funds transfer instruction was received, unless only one person is designated in both Parts I and II of this Exhibit B-2. [“\_\_\_\_\_”] understands the risks associated with communicating sensitive matters, including time sensitive matters, by e-mail. [“\_\_\_\_\_”] further acknowledges that instructions and data sent by e-mail may be less confidential or secure than instructions or data transmitted by other methods. The Escrow Agent shall not be liable for any loss of the confidentiality of instructions and data prior to receipt by the Escrow Agent.

CHECK box, if applicable:  
If the Escrow Agent is unable to obtain confirmation by e-mail, the Escrow Agent may, at its discretion, confirm by telephone call-back, as described in Option 1.

\*Option 3. Delivery of funds transfer instructions by password protected file transfer system only - no confirmation. The Escrow Agent offers the option to deliver funds transfer instructions through a password protected file transfer system. If [“\_\_\_\_\_”] wishes to use the password protected file transfer system, further instructions will be provided by the Escrow Agent. If [“\_\_\_\_\_”] chooses this Option 3, it agrees that no further confirmation of funds transfer instructions will be performed by the Escrow Agent.

\*Option 4. Delivery of funds transfer instructions by password protected file transfer system with confirmation. Same as Option 3 above, but the Escrow Agent shall confirm funds transfer instructions by  telephone call-back or  e-mail (must check at least one, may check both) to a person at the telephone number or e-mail address designated on Part II above. By checking a box in the prior sentence, the party shall be deemed to have agreed to the terms of such confirmation option as more fully described in Option 1 and Option 2 above.

*\*The password protected file system has a password that expires every 60 days. If you anticipate having infrequent activity on this account, please consult with your Escrow Agent before selecting this option.*

**Dated this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.**

**By \_\_\_\_\_**

**Name:**

**Title:**

EXHIBIT B-3

[“\_\_\_\_\_”] certifies that the names, titles, telephone numbers, e-mail addresses and specimen signatures set forth in Parts I and II of this Exhibit B-2 identify the persons authorized to provide direction and initiate or confirm transactions, including funds transfer instructions, on behalf of [“\_\_\_\_\_”], and that the option checked in Part III of this Exhibit B-2 is the security procedure selected by [“\_\_\_\_\_”] for use in verifying that a funds transfer instruction received by the Escrow Agent is that of [“\_\_\_\_\_”].

[“\_\_\_\_\_”] has reviewed each of the security procedures and has determined that the option checked in Part III of this Exhibit B-2 best meets its requirements; given the size, type and frequency of the instructions it will issue to the Escrow Agent. By selecting the security procedure specified in Part III of this Exhibit B-2, [“\_\_\_\_\_”] acknowledges that it has elected to not use the other security procedures described and agrees to be bound by any funds transfer instruction, whether or not authorized, issued in its name and accepted by the Escrow Agent in compliance with the particular security procedure chosen by [“\_\_\_\_\_”].

**NOTICE:** The security procedure selected by [“\_\_\_\_\_”] will not be used to detect errors in the funds transfer instructions given by [“\_\_\_\_\_”]. If a funds transfer instruction describes the beneficiary of the payment inconsistently by name and account number, payment may be made on the basis of the account number even if it identifies a person different from the named beneficiary. If a funds transfer instruction describes a participating financial institution inconsistently by name and identification number, the identification number may be relied upon as the proper identification of the financial institution. Therefore, it is important that [“\_\_\_\_\_”] take such steps as it deems prudent to ensure that there are no such inconsistencies in the funds transfer instructions it sends to the Escrow Agent.

**Part I**

**Name, Title, Telephone Number, Electronic Mail (“e-mail”) Address and Specimen Signature for person(s) designated to provide direction, including but not limited to funds transfer instructions, and to otherwise act on behalf of [“\_\_\_\_\_”]**

<u>Name</u>	<u>Title</u>	<u>Telephone Number</u>	<u>E-mail Address</u>	<u>Specimen Signature</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**Part II**

**Name, Title, Telephone Number and E-mail Address for person(s) designated to confirm funds transfer instructions**

<u>Name</u>	<u>Title</u>	<u>Telephone Number</u>	<u>E-mail Address</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

### Part III

#### Means for delivery of instructions and/or confirmations

The security procedure to be used with respect to funds transfer instructions is checked below:

- Option 1. Confirmation by telephone call-back. The Escrow Agent shall confirm funds transfer instructions by telephone call-back to a person at the telephone number designated on Part II above. The person confirming the funds transfer instruction shall be a person other than the person from whom the funds transfer instruction was received, unless only one person is designated in both Parts I and II of this Exhibit B-2.
- CHECK box, if applicable:  
If the Escrow Agent is unable to obtain confirmation by telephone call-back, the Escrow Agent may, at its discretion, confirm by e-mail, as described in Option 2.
- Option 2. Confirmation by e-mail. The Escrow Agent shall confirm funds transfer instructions by e-mail to a person at the e-mail address specified for such person in Part II of this Exhibit B-2. The person confirming the funds transfer instruction shall be a person other than the person from whom the funds transfer instruction was received, unless only one person is designated in both Parts I and II of this Exhibit B-2. [“\_\_\_\_\_”] understands the risks associated with communicating sensitive matters, including time sensitive matters, by e-mail. [“\_\_\_\_\_”] further acknowledges that instructions and data sent by e-mail may be less confidential or secure than instructions or data transmitted by other methods. The Escrow Agent shall not be liable for any loss of the confidentiality of instructions and data prior to receipt by the Escrow Agent.
- CHECK box, if applicable:  
If the Escrow Agent is unable to obtain confirmation by e-mail, the Escrow Agent may, at its discretion, confirm by telephone call-back, as described in Option 1.
- \*Option 3. Delivery of funds transfer instructions by password protected file transfer system only - no confirmation. The Escrow Agent offers the option to deliver funds transfer instructions through a password protected file transfer system. If [“\_\_\_\_\_”] wishes to use the password protected file transfer system, further instructions will be provided by the Escrow Agent. If [“\_\_\_\_\_”] chooses this Option 3, it agrees that no further confirmation of funds transfer instructions will be performed by the Escrow Agent.
- \*Option 4. Delivery of funds transfer instructions by password protected file transfer system with confirmation. Same as Option 3 above, but the Escrow Agent shall confirm funds transfer instructions by  telephone call-back or  e-mail (must check at least one, may check both) to a person at the telephone number or e-mail address designated on Part II above. By checking a box in the prior sentence, the party shall be deemed to have agreed to the terms of such confirmation option as more fully described in Option 1 and Option 2 above.

*\*The password protected file system has a password that expires every 60 days. If you anticipate having infrequent activity on this account, please consult with your Escrow Agent before selecting this option.*

Dated this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

By \_\_\_\_\_

Name:

Title:

EXHIBIT C

**FEEES OF ESCROW AGENT**

Corporate Trust Services Schedule of fees to provide escrow agent services.