Millennium Coal Export Terminal
Longview, Washington

Coal Export Terminal including Docks 2 and 3 and
Associated Trestle

Critical Areas Assessment

May 19, 2017

Prepared by:
Grette Associates, LLC
151 South Worthen Street, Suite 101
Wenatchee, Washington 98801
509-663-6300

Prepared for:
Millennium Bulk Terminals – Longview, LLC
ATTN. Kristin Gaines
MILLENNIUM BULK TERMINALS – LONGVIEW

COAL EXPORT TERMINAL
CRITICAL AREAS ASSESSMENT

PREPARED FOR:
MILLENNIUM BULK TERMINALS – LONGVIEW, LLC
ATTN. KRISTIN GAINES
P.O. BOX 2098
LONGVIEW, WA
360-425-2800

PREPARED BY:
GRETTE ASSOCIATES LLC
151 SOUTH WORTHEN, SUITE 101
WENATCHEE, WASHINGTON 98801
(509) 663-6300

2102 NORTH 30TH, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

MAY 19, 2017

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS
TABLE OF CONTENTS

1. INTRODUCTION ........................................................................................................ 1
  1.1 BACKGROUND ................................................................................................. 1
  1.2 DISCLAIMER ................................................................................................. 2

2. PROPOSED PROJECT ................................................................................................ 4
  2.1 PROJECT DESCRIPTION ............................................................................... 4

3. CRITICAL AREAS ..................................................................................................... 6

4. EXISTING CONDITIONS .......................................................................................... 7
  4.1 WETLANDS ..................................................................................................... 7
    4.1.1 Wetlands Outside of the Project Area .................................................. 10
  4.2 FISH AND WILDLIFE HABITAT CONSERVATION AREAS ......................... 11
    4.2.1 Aquatic FWHCA ................................................................................. 13
    4.2.2 Terrestrial FWHCAs ........................................................................... 15
  4.3 FREQUENTLY FLOODED AREAS .................................................................. 15
  4.4 AQUIFER RECHARGE AREAS ........................................................................ 15
  4.5 GEOLOGICALLY HAZARDOUS AREAS ......................................................... 16

5. PROJECT IMPACTS .................................................................................................. 18
  5.1 WETLANDS .................................................................................................... 18
    5.1.1 Potential Impacts .................................................................................... 18
    5.1.2 Avoidance and Minimization Measures .......................................... 18
  5.2 FISH AND WILDLIFE HABITAT CONSERVATION AREAS ......................... 19
    5.2.1 Potential Impacts .................................................................................... 19
    5.2.2 Avoidance and Minimization Measures .......................................... 20
    5.2.3 State Management Recommendations .......................................... 20

6. MITIGATION PLAN ................................................................................................. 22

7. PROFESSIONAL QUALIFICATIONS ..................................................................... 24
  7.1 PERSONNEL ................................................................................................. 24

8. REFERENCES ........................................................................................................... 25
LIST OF TABLES

Table 1. Wetlands identified within the Project Area ......................................................... 7
Table 2. Off Site Wetlands within 300 feet of the Project Area ........................................ 11
Table 3. List of aquatic state priority species present in the Project Area1 ...................... 14
Table 4. List of aquatic ESA species and critical habitats (CH) present in the Project Area. ................................................................................................................... 14

LIST OF FIGURES

Figure 1. Vicinity of the proposed Project .......................................................................... 2
Figure 2. Proposed CET Project Area ................................................................................ 5
Figure 3. Wetlands within the Project area and MBT-Longview leased area .................... 8
Figure 4. Study area of terrestrial and aquatic environment impacts ............................ 12
Figure 5. Columbia River FWHCAs ................................................................................ 13

LIST OF SHEETS

Sheet 1. Wetlands A, C, Y, Z, and P2 with associated buffers
Sheet 2. Wetlands D, E, F, G, and H with associated buffers
Sheet 3. Wetland X with associated buffer
Sheet 4. Wetlands and buffers on site north of Industrial Way
Sheet 5. Wetlands Q1, Q2, Q3, and Q4 with associated buffers

LIST OF APPENDICES

Appendix A. Queried Information
Appendix B. EPIC Planning Clearance Information
1. INTRODUCTION

Millennium Bulk Terminals, LLC - Longview ("MBT-Longview") proposes to build a deep water terminal for the transfer of coal between rail and ocean-going vessels for export. The proposed coal export terminal project ("CET Project" or "Project") would be located near Longview in Cowlitz County, Washington, adjacent to the Columbia River, on an existing brownfield site suitably zoned for heavy industrial use (Figure 1). The proposed CET Project would cover approximately 190 upland acres of the approximately 540-acre site leased by MBT-Longview and would consist of rail unloading, storage, reclaiming, and shiploading facilities. The proposed CET Project would be capable of receiving, stockpiling, blending and loading coal by conveyor onto ships for export.

The CET Project site is located at approximately river mile (RM) 63 of the Columbia River. Northwest Alloys, Inc. (NWA) is the owner of the subject property and leases certain aquatic lands contiguous to Northwest Alloys’ property from the Washington Department of Natural Resources (DNR) subject to aquatic lands lease No. 20-B09222. MBT-Longview owns the site’s assets and facilities and has a long term ground lease with Northwest Alloys to occupy, develop and operate the site. MBT-Longview is also the operator for Northwest Alloys in the aquatic land lease area under contract from Northwest Alloys.

Activities proposed at the site would result in unavoidable impacts to critical areas identified in the Cowlitz County Code (CCC) Chapter 19.15. There are five types of critical areas in Cowlitz County: wetlands; fish and wildlife conservation areas; frequently flooded areas; aquifer recharge areas; and geologically hazardous areas. Two types of confirmed critical areas, wetlands and fish and wildlife conservation areas, exist on or within 300 feet of the CET Project site. This document is intended to meet the requirements of CCC 19.15.090(F) and 19.15.130(C), which requires that a Critical Areas Assessment (CAA) be prepared for projects that occur within critical areas or their buffers.

This CET Project is associated with a variety of other local, state, and federal documents and permits. These documents include a State Environmental Policy Act (SEPA) Final Environmental Impact Statement (FEIS) (ICF International 2017a), Biological Assessments (BAs) (Grette Associates 2017a and 2017b), and multiple wetland delineation reports (Grette Associates 2014a, 2014b, and 2014c) among others. These documents contain a high level of detail and explanation for the proposed Project and are referenced frequently throughout this CAA.

1.1 BACKGROUND

The Project site has a long history of industrial use. It was initially developed as an aluminum smelter by Reynolds Metals Company (RMC) to support World War II efforts in 1941; the existing dock (Dock 1) was constructed in the late 1960s for the direct import of alumina ore to the plant via ocean-going vessels. The facility was operated as an aluminum smelter until 2001, when smelter operations ceased. The site continues to support industrial operations and is currently used as a bulk materials handling facility
that includes both aquatic and upland facilities. Current unloading and loading activities are conducted to or from ships, railcars, and trucks. These activities would continue over the existing Dock 1 and in other areas of the site not used for the coal terminal. Recent actions requiring federal permits at the facility includes maintenance structural work and maintenance dredging of the berth at the existing Dock 1 facility conducted in 2011 (NWS 2010-01220); NWA and MBT-Longview have recently submitted applications for additional structural maintenance and maintenance dredging at the Dock 1 facility. Maintenance dredging has been approved (NWS 2015-324), and the first round of dredging was completed in December 2016.

![Figure 1. Vicinity of the proposed Project](image)

### 1.2 DISCLAIMER

The findings and conclusions documented in this report have been prepared for specific application to this proposed project site. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us. Changes in government codes, regulations, or laws may occur. Because of such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

Wetland boundaries are based on conditions present at the time of the site visit and considered preliminary until the flagged wetland and/or drainage boundaries are validated by the appropriate jurisdictional agencies. Validation of the boundaries by the regulating
agencies provide a certification, typically in writing, that the wetland boundaries verified are the boundaries that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulating agencies can provide this certification.
2. PROPOSED PROJECT

2.1 PROJECT DESCRIPTION

The CET Project would include receipt of coal (by train), railcar unloading, onsite coal storage in stockpiles, and coal transfer to cargo ships for export. The CET Project would be completed in two successive stages, representing operational capacities of 25 million metric tons per year (MMTPY) and 44 MMTPY, respectively. Current permit drawings are included in the Mitigation Plan for this project (Grette Associates 2017c in prep).

The CET Project location is along the north side of the Columbia River in unincorporated Cowlitz County (population 102,410) immediately to the northwest (downstream) of a Weyerhaeuser Company mill and log export facility and the Port of Longview Terminals. The City of Longview is located to the north, adjacent to the CET Project site. The City of Kelso is located approximately 5 miles east of the site along the Cowlitz River. These cities have a mix of urban uses, such as residential, commercial, and industrial areas, sporting facilities, hospitals, education facilities, and major transportation corridors.

MBT-Longview leases approximately 540-acres from NWA. The 540-acre leased area was formerly used as the Reynolds Metals Reduction Plant (Former Reynolds Plant), and encompasses land both south and north of Industrial Way. The entire Former Reynolds Plant site is a Model Toxics Control Act (MTCA) brownfield redevelopment site. The CET Project would be built on a portion of the leased area. A separate portion of the former aluminum production site is, and would continue to be, used by MBT-Longview for bulk product handling operations.

The CET Project would be built on approximately 190 acres of the former Reynolds Metals site\(^1\), now referred to in the remainder of this document as the Project Area (Figure 2). The CET Project would be constructed and operated on lands located entirely south of Industrial Way (SR 432). The CET activities would not change the adjacent operating bulk material handling and storage activities, and would be a separate activity with dedicated equipment.

Industrial Way is the nearest land transportation corridor and it extends along the north side of the proposed CET site. The larger 540-acre MBT-Longview property includes driveway access, and a connection to the Reynolds Lead. The Reynolds Lead is a short line, which in turn connects to the mainline rail operated by Burlington Northern Santa Fe (BNSF) railroad.

The Project description above describes the on-site alternative, or the proposed Project. Two other alternatives were also presented. These development alternatives for this Project are known as the off-site and no action alternatives. Full details of each development alternative may be found in Chapter 3 of Millennium Bulk Terminal – Longview: Final Environmental Impact Statement (FEIS) (ICF International 2017a). The off-site alternative would require building the CET on undeveloped property within the

\(^1\) This includes a small portion of properties currently owned by the Bonneville Power Administration (BPA).
City of Longview and unincorporated Cowlitz County. This proposal would require 220 acres as opposed to the 190 acres to be utilized by the on-site alternative (ICF International 2017a). This area is locally referred to as “Barlow Point”. The no action alternative would allow the current facilities to operate as they have been, with probable further expansion of MBT-Longview (ICF International 2017a).

Figure 2. Proposed CET Project Area
3. CRITICAL AREAS

Critical areas as described in CCC 19.15.030 are areas that, “contain valuable natural resources, provide natural scenic qualities important to the character of the community, perform important ecological functions and values, or present a hazard to life and property.” Cowlitz County has identified and described five different critical areas present within county jurisdiction.

According to CCC 19.15.090, a critical areas determination is first required to verify the presence of critical areas. Critical areas were identified through discussion with Cowlitz County (County), multiple site visits, and a query of local, state, and federal databases. Based on the information gathered, it was determined that wetlands, fish & wildlife habitat conservation areas (FWHCAs), and frequently flooded areas are present within the Project Area. The following databases recommended under CCC 19.15.110 were used to assess current known critical areas within the assessment area:

- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species online interactive mapper (WDFW 2017a)
- WDFW SalmonScape online interactive mapper (WDFW 2017b)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online interactive mapper (USFWS 2017).
- Washington State Department of Ecology (WDOE) Flood Hazard online interactive mapper (WDOE 2017)
- Washington Department of Health (WDOH) Source Water Assessment Program (SWAP) mapping application online (WDOH 2017)
- Washington Department of Natural Resources (WDNR) Natural Hazards online interactive mapper (WDNR 2017)
- Cowlitz County EPIC online interactive mapper (Cowlitz County 2017)

All critical areas within the vicinity of the Project Area were assessed based on the requirements of the CCC. Results to each of these database queries may be found in Appendices A and B.
4. EXISTING CONDITIONS

4.1 WETLANDS

All wetlands within the Project Area were assessed, delineated, and rated between 2011 and 2013 on parcels 619530400, 61953, and 61950 (Table 1). Wetland assessments and delineations were conducted and reported by parcel number (Grette Associates 2014a, 2014b, and 2014c). These wetland delineation reports describe all wetlands within and near the Project Area including hydrologic characteristics, vegetation, habitat functions and other features. Figure 3 and Sheets 1-5 display all prior and current wetlands on site and off site. Previously existing wetlands (P1 and P3) are discussed in Section 6 of this document. A detailed ALTA survey drawing of the existing conditions, including easements, water lines, and utilities, is available on request.

The Project Area also contains damaged and degraded wetlands that had been filled or altered. Descriptions of these wetlands may be found in Appendix G of the Wetland and Stormwater Ditch Delineation Report – Parcel 619530400 (Grette Associates 2014a). The wetland delineation and classification efforts used existing site information as well as best available historical data to determine the historic wetland conditions. Thus, the wetlands described below include existing and historic wetlands within the property. The assessment discusses both the wetland’s current condition and likely historic condition before alteration. Buffers of many of the wetlands in Table 1 are degraded and contain mainly Himalayan blackberry (Rubus armeniacus), reed canarygrass (Phalaris arundinacea), and Scotch broom (Cytisus scoparius).

All wetland delineations were conducted using the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0 (USACE 2010). Sheets 1, 2, and 3 display each wetland and its associated buffer. The information described in those wetland delineation reports is summarized below.

Table 1. Wetlands identified within the Project Area

<table>
<thead>
<tr>
<th>Wetland</th>
<th>Acreage</th>
<th>Category</th>
<th>Rating</th>
<th>Buffer (ft)²</th>
<th>Cowardin Class</th>
<th>HGM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6.28</td>
<td>III</td>
<td>46</td>
<td>80</td>
<td>PFO</td>
<td>Depressional</td>
</tr>
<tr>
<td>C</td>
<td>3.38</td>
<td>III</td>
<td>41</td>
<td>80</td>
<td>PEM/FO</td>
<td>Depressional</td>
</tr>
<tr>
<td>Z</td>
<td>11.22</td>
<td>III</td>
<td>30</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>Y</td>
<td>3.40</td>
<td>III</td>
<td>44</td>
<td>80</td>
<td>PEM/SS</td>
<td>Depressional</td>
</tr>
<tr>
<td>P2</td>
<td>2.65</td>
<td>IV</td>
<td>20</td>
<td>50</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>D</td>
<td>5.43</td>
<td>III</td>
<td>49</td>
<td>80</td>
<td>PSS</td>
<td>Depressional</td>
</tr>
<tr>
<td>E</td>
<td>9.46</td>
<td>III</td>
<td>45</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>F</td>
<td>0.45</td>
<td>III</td>
<td>46</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>G</td>
<td>2.60</td>
<td>III</td>
<td>49</td>
<td>80</td>
<td>PSS</td>
<td>Depressional</td>
</tr>
<tr>
<td>H</td>
<td>0.24</td>
<td>III</td>
<td>44</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>X</td>
<td>0.44</td>
<td>III</td>
<td>48</td>
<td>80</td>
<td>PSS</td>
<td>Riverine</td>
</tr>
</tbody>
</table>

² As required by CCC 19.15.120
Figure 3. Wetlands within the Project area and MBT-Longview leased area
Vegetation

The wetlands on and within 300 feet of the Project Area have similar vegetative communities. Common vegetation present in these wetlands are cattail (Typha spp.), Pacific willow (Salix lucida), western bittercress (Cardamine oligosperma), slough sedge (Carex obnupta), soft rush (Juncus effusus), red osier dogwood (Cornus sericea), black cottonwood (Populus trichocarpa), and Oregon ash (Fraxinus latifolia). Invasive species such as Himalayan blackberry (Rubus armeniacus) and reed canarygrass were also present (Grette Associates 2014a, 2014b, and 2014c).

Details of the plant communities within each wetland can be found in the wetland delineation reports (Grette Associates 2014a, 2014b, and 2014c).

Soils

The soils observed within the wetlands on the site varied, likely a result of past industrial land uses. Typical soil textures observed include loamy silt, silty clay loam and loam soils. Mapped soil series within the wetlands include Caples silty clay loam, 0 to 3 percent slopes and Snohomish silty clay loam (Grette Associates 2014a, 2014b, and 2014c).

Details of the hydric soil characteristics observed within each wetland can be seen in the three wetland delineation reports (Grette Associates 2014a, 2014b, and 2014c).

Hydrology

Wetland hydrology within the study area is largely supported by precipitation, stormwater runoff, and high groundwater. Wetland hydrology indicators observed within the wetlands include geomorphic position, soil saturation, passing of the FAC Neutral Test, oxidized rhizospheres along living roots and water-stained leaves (Grette Associates 2014a, 2014b, and 2014c).

Details of the hydrology within each wetland can be seen in the wetland delineation reports (Grette Associates 2014a, 2014b, and 2014c).

Habitat Functions

Habitat functions provided by each wetland were similar; each wetland provides cover, forage, nesting sites, and breeding opportunities primarily for small mammals, amphibians, and birds. Wetland P2 is surrounded by the existing terminal and Industrial Way, therefore limiting habitat functions provided due to habitat fragmentation.

Details of the habitat functions provided by each wetland can be seen in the wetland delineation reports (Grette Associates 2014a, 2014b, and 2014c).
Buffers were assigned based on the guidelines of CCC19.15.120 (Table B) assuming high intensity land use. The buffers surrounding many of the wetlands within the Study Area are degraded and have been altered by historical industrial land uses. Buffer vegetation, where present, typically consists of Himalayan blackberry, reed canarygrass, and Scotch broom. Grading associated with the construction of rail tracks, stormwater features, access roads, and the closed Reynolds landfill have all affected wetland buffers in the Study Area. These activities have removed vegetation, altered surface, and shallow groundwater, and changed the topography of the wetland buffers, reducing their effectiveness at providing buffer functions to the wetlands in the Study Area.

4.1.1 Wetlands Outside of the Project Area

In accordance with CCC 19.15.120, wetlands within 300 feet of the Project Area must also be assessed. These wetlands include a Palustrine Forested/Scrub-Shrub Temporarily Flooded wetland and Palustrine Emergent Temporarily Flooded wetland (Appendix A; USFWS 2017). Parcels 10213 and 61950 contain wetlands within 300 feet of the Project Area (Grette Associates 2014d and 2017c in prep).

Nine wetlands were identified on the site north of Industrial Way during a wetland reconnaissance performed by Grette Associates in 2014 (Grette Associates 2014d). Four wetlands were also identified close to the Columbia River southeast of the Project Area during a wetland reconnaissance in 2013 (Grette Associates 2017c in prep). Sheets 4 and 5 show the wetland boundaries and buffers of wetlands identified during these field efforts. Buffers to these wetlands were assigned based on high intensity land use using Longview Municipal Code (LMC) 17.10.110.4 Table-A and CCC 19.15.120, Tables B and C. According to LMC 17.10.110.2.a, wetland AS4 does not require a wetland buffer. Table 2 details the wetlands identified during reconnaissance. Further details on these wetland reconnaissance efforts may be found in the, Millennium Coal Export Terminal: Wetland and Stormwater Reconnaissance Report and Millennium Coal Export Terminal: Off-Channel Slough Mitigation Site Wetland Delineation Report (Grette Associates 2014d and 2017c in prep).
### Table 2. Off Site Wetlands within 300 feet of the Project Area

<table>
<thead>
<tr>
<th>Wetland</th>
<th>Acreage</th>
<th>Category</th>
<th>Rating</th>
<th>Buffer (ft)</th>
<th>Cowardin Class</th>
<th>HGM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS1</td>
<td>8.86</td>
<td>III</td>
<td>30</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>AS2</td>
<td>0.94</td>
<td>IV</td>
<td>26</td>
<td>50</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>AS3</td>
<td>0.12</td>
<td>IV</td>
<td>26</td>
<td>50</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>AS4</td>
<td>0.02</td>
<td>III</td>
<td>29</td>
<td>-</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>NW1</td>
<td>1.38</td>
<td>III</td>
<td>36</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>NW2</td>
<td>0.5</td>
<td>III</td>
<td>35</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>NW3</td>
<td>0.19</td>
<td>IV</td>
<td>28</td>
<td>50</td>
<td>FO</td>
<td>Depressional</td>
</tr>
<tr>
<td>NW4</td>
<td>0.05</td>
<td>IV</td>
<td>28</td>
<td>50</td>
<td>PSS/FO</td>
<td>Depressional</td>
</tr>
<tr>
<td>NE1</td>
<td>29.48</td>
<td>III</td>
<td>39</td>
<td>80</td>
<td>PEM</td>
<td>Depressional</td>
</tr>
<tr>
<td>Q1</td>
<td>0.28</td>
<td>IV</td>
<td>15</td>
<td>50</td>
<td>PEMC</td>
<td>Depressional</td>
</tr>
<tr>
<td>Q2</td>
<td>0.32</td>
<td>IV</td>
<td>15</td>
<td>50</td>
<td>PEMC</td>
<td>Depressional</td>
</tr>
<tr>
<td>Q3</td>
<td>0.26</td>
<td>IV</td>
<td>15</td>
<td>50</td>
<td>PEMC</td>
<td>Depressional</td>
</tr>
<tr>
<td>Q4</td>
<td>0.03</td>
<td>IV</td>
<td>15</td>
<td>50</td>
<td>PEMC</td>
<td>Depressional</td>
</tr>
</tbody>
</table>

#### 4.2 Fish and Wildlife Habitat Conservation Areas

Criteria for fish and wildlife habitat conservation areas (FWHCA) are listed under CCC Table 19.15.130-A. FWHCAs in the Project Area include the Columbia River and its associated riparian area and wetlands mentioned in the previous section. Wetlands are thoroughly discussed in Section 4.1 above, they will not be further discussed under this section; however, it is important to understand that wetlands are also recognized as FWHCAs. The wetlands within the Project Area represent priority habitats recognized by WDFW (WDFW 2017a; Appendix A). The Columbia River has a primary association with a variety of state and federally protected species and is a Water of the State and Type S water, according to CCC Table 19.15.130-A.

The study area for terrestrial and aquatic habitats that might be affected by this Project was determined using appropriate disturbance thresholds for fish and wildlife. The study area for terrestrial habitats consists of the Project Area as well as the area up to one half mile beyond the Project Area boundary. The aquatic habitat study area extends from 5.1 miles upriver to 2.1 miles downriver from the upriver and downriver ends of the proposed docks (ICF International 2016a). The study area used to determine the direct impacts for terrestrial and aquatic habitats can be seen in Figure 4. Potential impacts to these FWHCAs are discussed in Section 5.2 of this document.

Detailed information on each aspect of the FWHCAs may be found in the SEPA EIS, Biological Assessments, the wetland delineation reports, and Biological Resource Review related to the proposed Project (ICF International 2017a; Grette Associates 2017a and 2017b; Grette Associates 2014a, 2014b, 2014c, and 2014e). Avoidance and minimization measures may be seen in Section 5.2.2 of this document. WDFW management recommendations are detailed in Section 5.2.3 of this document.

---

3 As required by CCC 19.15.120
Figure 4. Study area of terrestrial and aquatic environment impacts
4.2.1 Aquatic FWHCA

The Columbia River is used by a number of State priority species, as well as federally threatened, endangered, or candidate species under the Endangered Species Act (ESA). A portion of the Project would occur within the riparian habitat area (RHA). Because the associated body of water (Columbia River) is a Type S water, the RHA buffer width is 150 feet, according to CCC Table 19.15.130-B.

Habitat types below the ordinary high water mark (OHWM) in the Columbia River consist of a deepwater zone, shallow water zone, and the active channel margin (ACM) (ICF International 2016a). The deepwater zone of the Columbia River is subject to both poor light penetration and strong currents, which provides little support for aquatic vegetation. The shallow water zone is narrow and steep and also has little potential to support aquatic vegetation. The active channel margin contains shoreline and nearshore habitat from the OHWM to approximately +11 feet Columbia River datum (CRD)⁴ (ICF International 2016a). All Columbia River habitats near the Project Area may be seen in Figure 5.

![Figure 5. Columbia River FWHCAs](image)

The riparian habitat area extends 200 feet from OHWM. Most of the riparian habitat along the Project Area occurs on the Consolidated Diking and Improvement District

---

⁴ Columbia River Datum (CRD) is a vertical datum that is the adopted fixed low water reference plane for the lower Columbia River. It is the plane of reference from which river stage is measured on the Columbia River from the lower Columbia River up to Bonneville Dam, and on the Willamette River up to Willamette Falls.
(CDID) #1 levee, a highly maintained vegetated area with mowed grasses and weeds. Trees and shrubs within this area are sparse, and occur along the wetted shoreline and the toe of the levee. Observed tree species consist largely of black cottonwood. Shrubs species consist of native and invasive species, such as Scotch broom and willow (*Salix* spp.) (Grette Associates 2014e).

State priority species are listed in Table 3. Federally protected species are identified in Table 4. While many species in these Tables overlap, some species are given different status or listing. Table 4 also identifies designated critical habitat and if critical habitat is within the Project Action Area.

**Table 3. List of aquatic state priority species present in the Project Area**

<table>
<thead>
<tr>
<th>Species</th>
<th>State Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinook salmon (<em>Oncorhynchus tshawytscha</em>)</td>
<td>Candidate</td>
</tr>
<tr>
<td>Coho salmon (<em>O. kisutch</em>)</td>
<td>Candidate</td>
</tr>
<tr>
<td>Chum salmon (<em>O. keta</em>)</td>
<td>Candidate</td>
</tr>
<tr>
<td>Sockeye salmon (<em>O. nerka</em>)</td>
<td>Candidate</td>
</tr>
<tr>
<td>Steelhead trout (<em>O. mykiss</em>)</td>
<td>Candidate</td>
</tr>
<tr>
<td>Bull trout (<em>Salvelinus confluentus</em>)</td>
<td>Candidate</td>
</tr>
<tr>
<td>Sockeye salmon (<em>O. nerka</em>)</td>
<td>Candidate</td>
</tr>
<tr>
<td>Eulachon (<em>Thaelichthys pacificus</em>)</td>
<td>Candidate</td>
</tr>
</tbody>
</table>

1 Based on WDFW 2008 and 2012.

**Table 4. List of aquatic ESA species and critical habitats (CH) present in the Project Area.**

<table>
<thead>
<tr>
<th>Species, ESU/DPS if applicable</th>
<th>Federal Status</th>
<th>Critical Habitat Designated</th>
<th>Critical Habitat in Action Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinook salmon (<em>Oncorhynchus tshawytscha</em>)</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Snake River fall ESU</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Snake River spring/summer ESU</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Upper Columbia River spring ESU</td>
<td>Endangered</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Lower Columbia River ESU</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Upper Willamette River ESU</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Coho salmon (<em>O. kisutch</em>)</td>
<td>Threatened</td>
<td>no</td>
<td>n/a</td>
</tr>
<tr>
<td>Lower Columbia River ESU</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Chum salmon (<em>O. keta</em>)</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Columbia River ESU</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Sockeye salmon (<em>O. nerka</em>)</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Snake River ESU</td>
<td>Endangered</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Steelhead trout (<em>O. mykiss</em>)</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Snake River DPS</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Upper Columbia River DPS</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Middle Columbia River DPS</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Lower Columbia River DPS</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Upper Willamette River DPS</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Species, ESU/DPS if applicable</td>
<td>Federal Status</td>
<td>Critical Habitat Designated</td>
<td>Critical Habitat in Action Area</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Bull trout (<em>Salvelinus confluentus</em>)</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Columbia River DPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other species, Columbia River</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eulachon (<em>Thaelichthys pacificus</em>), southern DPS</td>
<td>Threatened</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Green sturgeon (<em>Acipenser medirostris</em>), southern DPS</td>
<td>Threatened</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

### 4.2.2 Terrestrial FWHCAs

The terrestrial environment on-site has been heavily altered due to industrial development and flood control. However, the site still provides habitat to a variety of wildlife species. Much of the terrestrial habitat and surrounding areas have been disturbed south of Industrial Way within the Project Area. Usable habitat remaining provides forage, nesting, breeding, and cover opportunities for many species. Nearly the entire terrestrial habitat within the Project Area is now fragmented (ICF International 2016a).

The terrestrial study area to the north of Industrial Way appears less disturbed than that in the Project Area. This area is dominated by wetlands containing mostly reed canarygrass.

Vegetation communities in and adjacent to the Project Area consist of wetlands, forested upland, scrub-shrub upland, unmanaged herbaceous upland, and managed herbaceous upland. These vegetation communities host a variety of plant species both native and non-native, including red elderberry (*Sambucus racemosa*), red alder (*Alnus rubra*), Himalayan blackberry, willows and many other species (ICF International 2016a). Detailed information on the terrestrial FWHCA within the Project Area can be found in Chapters 4.6 of the FEIS.

### 4.3 Frequently Flooded Areas

There are no frequently flooded areas within the Project Area. The nearest frequently flooded area according to FEMA is a ditch north of Industrial Way. This area will not be directly affected by the construction of the proposed CET. There are no anticipated impacts to this critical area and therefore no avoidance, minimization, or mitigation impacts.

### 4.4 Aquifer Recharge Areas

Critical aquifer recharge areas (CARAs) are areas of land where there is substantial evidence that the area has a critical effect on aquifers used for potable water. They are rated based on a number of geological features which may all be found in CCC 19.15.160-A. Based on queries of local, state, and federal databases, and information obtained from technical reports analyzing groundwater around the site, CARAs do not exist within the site.
Primary hydrologic influences to shallow groundwater on site are the Columbia River and the CDID ditch system (Anchor QEA 2015). The CDID ditch water levels are maintained through active pumping at elevations lower than the Columbia River (Anchor QEA 2015). This causes the groundwater gradients to move towards the ditch system. These ditches greatly influence the flow of groundwater on and around the site.

The site contains a Lower Alluvium, Upper Alluvium, and surficial soils. Most potable well water from the area comes from water within the Lower Alluvium, which is present at approximately 200 feet below the ground surface (bgs) transitioning to gravel from sand around approximately 400 feet bgs. (Anchor QEA 2015; ICF International 2017b). A study conducted at the nearby Mint Farm Regional Water Treatment Plant revealed that the Columbia River is a primary source of the Lower Alluvium groundwater (ICF International 2017b).

Surficial soils and the Upper Alluvium are almost exclusively influenced by the Columbia River, CDID ditch system, and NPDES ditch system. Recharge through precipitation and seasonal fluctuations are noted, but do not have substantial influence on the groundwater within these areas (Anchor QEA 2015).

The nearest wellhead protection areas are approximately 3,000 feet from the Project Area near the Mint Farm Regional Water Treatment Plant, according to the Washington Department of Health (WDOH) Source Water Assessment Program (SWAP) mapping application online (WDOH 2017; Appendix A). These wellhead protection areas are classified as Group A wellhead protection areas with an assigned time of travel and each are identified as having low susceptibility, meaning that the geologic conditions have low permeability and infiltration, with more restrictive geology; therefore, allowing fewer contaminants into the groundwater. The deep aquifer is the primary source of water (ICF International 2017b).

Based on the above information, the areas within and adjacent to the Project Area are not critical aquifer recharge areas as the main source of recharge for the area is the Columbia River. These aquifers are not easily subject to contamination as described above and the area does not contain what the CCC defines as CARAs. BMPs and other precautions concerning groundwater may be found in Chapter 4.4.7 of the FEIS.

4.5 GEOLOGICALLY HAZARDOUS AREAS

There are no geologically hazardous areas within the Project Area. According to WDNR’s Natural Hazard mapper, a “Miscellaneous Landslide” is mapped within 300 feet of the Project Area on the northern side of Washington Highway 432 (WDNR 2017; Appendix A). The proposed CET terminal construction and operation will not affect this area.

Cowlitz County’s online EPIC mapper was queried to obtain EPIC Planning Clearance Information for each parcel (Appendix B). The EPIC documents for each parcel show geologically hazardous areas with slopes of 30-45% or greater are present (Cowlitz County 2017). Multiple on site observations and reconnaissance efforts reveal there are
no slopes on site. Geologically hazardous areas are not discussed further within this document.
5. PROJECT IMPACTS

Multiple alternatives have been analyzed in regard to potential environmental impacts resulting from the proposed Project. The on-site alternative, or proposed Project, is what will be discussed under anticipated impacts of the following sections. This on-site alternative is discussed in detail in Chapter 3 of the SEPA FEIS (ICF International 2017b).

5.1 WETLANDS

5.1.1 Potential Impacts

Only wetlands within parcel 619530400 would be directly affected as a result of this Project (Grette Associates 2014a). The proposed Project would result in the permanent loss of over 20 acres of wetlands. Wetlands A, C, Z, and P2 would be permanently filled due to construction activities. Wetland Y would be partially filled, leaving approximately 2.83 acres intact (ICF International 2017). Wetland characteristics may be found in Table 1 under Section 4.1, and in the Coal Export Terminal: Wetland and Stormwater Ditch Delineation Report - Parcel 619530400 (Grette Associates 2014a).

The functions currently provided by the wetlands mentioned above would be permanently lost. Functions of the wetlands on-site include water quality and wildlife habitat (ICF International 2017a). All of the hydrology and water quality functions of Wetlands A, C, Z, and P2 would be permanently lost. Wetland Y would retain some wetland functions as not all of this wetland is to be filled (ICF International 2017a). Wetlands north of Industrial Way and their associated buffers would not be affected by construction (ICF International 2017a).

Operation of the proposed CET would not have a direct impact on wetlands. However, vegetation in nearby wetlands could be susceptible to indirect impacts by coal dust generated by CET operations described in Section 4.3.5.1 of the FEIS (ICF International 2017a).

Full details of wetland impacts may be seen in Section 4.3 of the FEIS, which describes the on-site, off-site, and no action alternatives. Figure 4.3-2 in Section 4.3.5.1 of the FEIS displays the wetlands and area directly impacted by construction (ICF International 2017a).

5.1.2 Avoidance and Minimization Measures

Avoidance, minimization, and compensatory mitigation measures for this proposed Project are discussed in detail in each subject chapter and Appendix E of the SEPA FEIS (ICF International 2017a). A compensatory mitigation plan has been prepared to offset unavoidable, permanent impacts to wetlands (Grette Associates 2017d in prep). The mitigation plan is explained further in Section 6 of this document.

---

5 The mitigation plan is to be published May 25, 2017.
Best management practices required by local, state, and federal permits will aid in minimizing impacts from this Project (ICF International 2017a). Wetland buffers as required CCC 19.15.120.C (4)(a) will also be in place to minimize impacts to wetlands.

5.2 FISH AND WILDLIFE HABITAT CONSERVATION AREAS

5.2.1 Potential Impacts

Impacts to priority wetland habitats are discussed above in Section 5.1. The study area for determining impacts to FWHCAs is described in Section 4.2 of this document and is seen in Figure 4. Terrestrial and aquatic habitats will both be affected by this Project.

Potential direct effects to the aquatic environment include increases in turbidity and suspended sediments, pile breakage and creosote release, increased underwater noise from impact pile driving, and removal of benthos during pile driving, in addition to unanticipated discharges and construction debris (Grette Associates 2017a). All information and details concerning direct impacts to the aquatic environment may be seen in Section 5.1 of the BA.

It is assumed that the terrestrial habitats within the Project footprint would be completely cleared and grubbed (Grette Associates 2017b). The terrestrial FWHCAs to be affected by the Project are the wetlands that have been previously described in this document. Sections 4.1 and 5.1 summarize the wetlands within 300 feet of the Project Area and the anticipated impacts.

Please see Section 5 of the NOAA and USFWS BAs for a discussion of the potential direct and indirect impacts of the Project on FWHCA critical areas. Though the BAs are focused on impacts to ESA-listed species and critical habitats, they address species that are required to be addressed in this document or species that have sufficiently similar habitat requirements and life histories as to address all potential FWHCA impacts.
5.2.2 Avoidance and Minimization Measures

Avoidance, minimization measures, and Best Management Practices employed to protect FWHCAs affected by this Project are found in Chapters 4.2 and 4.7, and Appendix E, of the FEIS. As FWHCAs will be permanently affected by this Project, a compensatory mitigation plan has been prepared (Grette Associates 2017d in prep). Chapters 4.2 and 4.7 of the FEIS discuss minimization and mitigation measures for the natural environment affected by this Project. The Primary Constituent Elements (PCEs) for salmonid habitat and the effects of this Project on those PCEs are discussed in detail in the NOAA BA (Grette Associates 2017a).

5.2.3 State Management Recommendations

According to CCC 19.15.130(C)(4)(a), a Level 2 Critical Areas Assessment must include a discussion of federal, state, or local special management recommendations. WDFW has published management recommendations for salmonid species (Knight 2009). While these recommendations are primarily intended to provide guidance to local planning departments, the management priorities reflected therein can be applied generally to an individual project. The salmonid management recommendations are discussed below.

1. Maintain Riparian Areas

Applicable riparian area management recommendations include riparian vegetation management and riparian buffer impact considerations. The proposed Project is designed to avoid and minimize impacts to riparian vegetation to the extent practicable. The Project meets riparian habitat management recommendations of prioritizing and protecting riparian habitat.

2. Protect Large Woody Debris Recruitment

Applicable large woody debris (LWD) management recommendations include maintaining LWD and considering the natural movement of LWD within the river system. The Project would have no effect on LWD recruitment. No LWD would be removed as part of the Project, except that which must be relocated to install piling to support the trestle along the shoreline. As discussed above, the Project has been planned to avoid impacts to existing riparian vegetation, including existing large native riparian trees on the property. The Project would create riparian habitat, which would become a source of LWD. The Project meets the LWD management recommendations.

3. Protect In-Stream Habitat

Applicable in-stream habitat considerations include substrate, in-water structures, salmonid passage, and stream flows. The Project includes berth dredging, but this would not alter in-stream habitat relative to substrate conditions, as the substrate to be dredged is deeper than is typically used by juvenile salmonids. Further, no spawning gravel is present in the dredge footprint. Existing substrate consists of river sand, and the post-dredging substrate would also be river sand. Thus, the Project would result in no functional change in substrate conditions.
The Project’s purpose and need is to construct a coal export terminal on the property. New in-water structure is inherent to the Project. The terminal has been designed to avoid/minimize impacts to aquatic habitat to the extent possible, by placing the majority of overwater coverage in deeper areas.

The Project meets habitat management recommendations for in-stream habitat.

4. Water Quality

Applicable water quality considerations include pollutant sources, sediment management, and natural pollutant management/filtration. The Project would adhere to all applicable water quality regulations as part of the Section 401/404 water quality certification requirements. Water quality is discussed in Section 5.1 of the NOAA BA (Grette Associates 2017a). The Project meets habitat management recommendations for water quality.
6. MITIGATION PLAN

A compensatory mitigation plan has been prepared for this Project to fulfill requirements under Sections 401 and 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, the Washington Department of Fish and Wildlife Hydraulic Code Rules (WAC 220-660), Washington State Department of Ecology’s water quality standards (RCW 90.48), and Cowlitz County Code Chapter 19.15.170. The mitigation plan proposes to compensate for all unavoidable impacts to critical areas, and includes monitoring, maintenance and contingency elements. The Mitigation Plan meets all applicable critical areas mitigation requirements, monitoring requirements, and performance standards.

Wetland Mitigation Site

The CET Wetland Mitigation Site would convert an existing ditched and drained agricultural pasture to a diverse habitat of emergent, forested and scrub-shrub wetlands within the historic, and now disconnected, floodplain of the Columbia River. This will restore altered hydrology and historic forested and scrub-shrub wetlands, and provide potential habitat for wildlife. Three wetland plant communities will be planted—forested, scrub-shrub, and emergent. Additionally, a forested upland zone will also be established in the drier margins of the Mitigation Site. In total, the mitigation would convert approximately 61 acres of upland pasture to palustrine forested, scrub-shrub, and/or emergent wetlands, rehabilitate approximately 14 acres of degraded emergent wetlands and revegetate approximately 14 acres of upland buffer. Mitigation will be achieved by a combination of drainage alteration and grading. Mitigation for the proposed CET includes mitigation for unauthorized fill by a previous tenant on the NWA property that eliminated two wetlands. These former wetlands are referred to in other documents, including the mitigation plan, as wetlands P1 and P3. Wetland P1 was a 4.8 acre category III wetland and P3 was a 1.23 acre category IV wetland (Grette Associates 2017d in prep).

Construction of the Wetland Mitigation Site would entail:

- Filling or redirecting drainage to approximately +2 ft CRD;
- Placing fill around the perimeter of the Site to a minimum of +2 ft CRD;
- Excavating/grading portions of the Site to +2 ft to +3 ft CRD;
- Placing excavated soil along the perimeter of the Site to create vegetated buffers;
- Revegetating the Site with native emergent, shrub, and tree species.

Off-Channel Slough Mitigation Site

The Off-Channel Slough Mitigation Site would convert an isolated pond into an off-channel slough with a surface connection to the Columbia River. The Site is currently located waterward of the CDID levee, but is separated from the Columbia River by a berm. The Site would provide approximately 7 acres of new off-channel slough habitat.
(below OHW; +11.1 ft CRD) and incorporate emergent and scrub-shrub wetland, and forested riparian habitat. The slough’s elevation would range from a minimum of +4 ft CRD up to OHW to provide a range of habitat at varying river elevations and support a daily, year round surface connection to the Columbia River. It is anticipated that the Site would function as highly productive off-channel slough wetland and riparian complex, benefitting smaller subyearling salmonids as rearing and refuge habitat and larger yearling salmonids of all ESUs as a net-exporter of primary- and secondary-production.

Construction of the Off-Channel Slough Mitigation Site would entail:

- Excavating the outer berm to a maximum of approximately +22 ft CRD;
- Clearing/grubbing the outer berm of non-native species, leaving mature trees in place to the extent possible;
- Placing fill in the pond to a minimum elevation of +4 ft CRD;
- Excavating an inlet through the outer berm to connect the Site to the Columbia River;
- Placing rock and large woody debris along the inlet for long-term stability;
- Revegetating the Site with native emergent, shrub, and tree species.
7. PROFESSIONAL QUALIFICATIONS

This document was prepared by Grette Associates staff, including, Matthew Boyle, Scott Maharry, and Jay Dirkse. Critical Areas fieldwork was conducted by Matthew Boyle, Scott Maharry, Chad Wallin and Jay Dirkse.

7.1 PERSONNEL

Matthew Boyle – University of New Hampshire, 1984

Matthew is a Company Principal and Senior Biologist with expertise in fisheries ecology, marine ecology, wildlife biology, and wetlands ecological studies. His is responsible for quality control, regulatory compliance and mitigation regarding wetland impacts.

Scott Maharry – Central Washington University, 1999

Scott is a Senior Biologist in the Tacoma office with expertise in shoreline permitting, wetland and riparian systems assessments and restoration, and fisheries ecology. Scott led the field investigations, preparation of documents and wetland ratings under guidance provided by the USACE and the Washington Department of Ecology.

Chad Wallin – University of Washington, 2010

Chad Wallin is a Biologist with extensive training in wetland science and ecology restoration. Chad is responsible for field investigations, data collection, wetland ratings and habitat identification.

Jay Dirkse – Washington State University, 2006

Jay is a Biologist with expertise in shoreline permitting, critical areas surveys, and the delineation and rating of wetlands. Jay was responsible for field investigations, data collection and reporting information pertinent to aquatic habitat.
8. REFERENCES


<table>
<thead>
<tr>
<th>Common Name</th>
<th>Site Name</th>
<th>Priority Area Occurrence Type</th>
<th>Accuracy</th>
<th>Federal Status State Status</th>
<th>Sensitive Data Resolution</th>
<th>Source Entity Geometry Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater Emergent</td>
<td>N/A</td>
<td>Aquatic Habitat</td>
<td>NA</td>
<td>N/A</td>
<td>AS MAPPED</td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td>NWIWetlands</td>
<td>Aquatic habitat</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>US Fish and Wildlife Service Polygons</td>
</tr>
</tbody>
</table>

03/07/2017 1.27
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Site Name</th>
<th>Occurrence Type</th>
<th>Accuracy</th>
<th>Federal Status</th>
<th>Sensitive Data</th>
<th>Source Entity</th>
<th>Geometry Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>03/07/2017</td>
<td>US Fish and Wildlife Service Polygons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Site Name</td>
<td>Source Dataset</td>
<td>Source Record</td>
<td>Source Date</td>
<td>Priority Area</td>
<td>Occurrence Type</td>
<td>Accuracy</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------</td>
<td>-----------</td>
<td>----------------</td>
<td>---------------</td>
<td>-------------</td>
<td>---------------</td>
<td>----------------</td>
<td>----------</td>
</tr>
<tr>
<td>Other</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>Aquatic habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="http://www.ecy.wa">http://www.ecy.wa</a>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Riverine</td>
<td>N/A</td>
<td>NWI Wetlands</td>
<td>Aquatic Habitat</td>
<td>Aquatic habitat</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="http://www.ecy.wa">http://www.ecy.wa</a>.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DISCLAIMER.** This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.
CET Wetlands within the Project vicinity

March 24, 2017

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Freshwater Emergent Wetland
- Other
- Riverine
- Lake

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.
EPIC Planning Clearance Information

Parcel: 61950
Owner: NORTHWEST ALLOYS INC
Site Address: Commercial

Status: Red
Proceed to the Building and Planning Department for a Planning Clearance Review. You can access the necessary forms from the online Site Plan Package. Planning Clearance may take up to 2 weeks from time of application.

Zoning and Comprehensive Plan

Zone: MH
Comprehensive Plan: MH
Subdivision: CRUMLINE LADUE DLC
Short Plat/Large Lot #: CRUMLINE LADUE DLC DESC: T-5,6 INCL
Acres: 59.42

Critical Areas

Fish and Wildlife Conservation Areas

Riparian Shoreline Stream: Yes
Riparian Fish Bearing Stream: Yes
Riparian Non Fish Bearing Stream: No
Riparian Habitat: Yes
Shoreline Jurisdictions: Yes
PHS: No
Stormwater: Yes

Geologically Hazardous Areas

Deep Seated Landslide: No
Deep Seated Landslide Scarp: No
Shallow Landslides: No
Sag Ponds: No
Potentially Unstable Slopes: No
Slopes 80%: Yes
Slopes 60-80%: No
Slopes 45-60%: Yes
Slopes 30-45%: No
Mine Hazards: No
Volcanic Hazards: No

Wetlands

NWI Wetlands: Yes
Hydrical Soils: Yes

Other

Timber Moratorium: No

Riparian Habitat Area (RHA): Areas adjacent to streams or rivers that influence the aquatic ecosystem by providing habitat, shade, nutrients, organic or inorganic debris, and woody material. The size of the RHA is dependent on the type of stream associated with it.

Shoreline Stream: A stream or water body that is designated a 'Shoreline of the State' by the WAC. Standard RHA width for a type 1(S) Stream is 150 feet as measured from the ordinary high water mark. Also see 'Shorelines Jurisdiction.'

Fish Bearing Stream: A stream that flows perennially and contains fish and/or potential fish habitat. Standard RHA width for Type 3(F) Fish Bearing Stream is 100 feet as measured from the ordinary high water mark.

Non Fish Bearing Stream: A stream that flows either seasonally or perennially, but does not contain fish and does not meet the physical criteria for a fish-bearing stream. Standard RHA width for a non fish bearing stream is 50 feet as measured from the ordinary high water mark.

Shorelines Jurisdiction: All of the water areas of the state, including reservoirs, and the associated shorelands, together with the lands underlying them. Development within 200 feet of the Ordinary High Water Mark or within the floodplain of the water body is regulated by Cowlitz County's Shoreline Master Program.

Priority Habitat Species (PHS): Habitat areas with unique or significant value to one or more priority species as classified by the State Department of Fish and Wildlife.

Wetlands: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Buffer requirements may vary, and are determined by the type of wetland and proposed development activity.

Hydrical Soils: A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils may indicate the presence of a wetland area.

Stormwater: Areas of the unincorporated, urbanized areas of Cowlitz County that are subject to the requirements and provisions of the Cowlitz County Stormwater Management Ordinance.

Geologically Hazardous Areas: Areas potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. These may include areas with active or inactive landslides, active or inactive scarps, and potentially unstable slopes as identified on the adopted landslide inventory maps.

Counter Complete
Ready for Permit Application

Printed: 04/04/2017 09:53:45 AM
Disclaimer: GIS maps do not carry legal authority to determine a boundary or the location of fixed works and are intended as a locational reference for planning, infrastructure and general information. Cowlitz County provides this information on an 'as is' basis without warranty of any kind, expressed or implied, including but not limited to warranties merchantability or fitness for a purpose, and assumes no responsibility for anyone's use of this information.
EPIC Planning Clearance Information

Parcel: 61953  
Owner: NORTHWEST ALLOYS INC  
Site Address: 4029 INDUSTRIAL WAY  
Status: Red

Proceed to the Building and Planning Department for a Planning Clearance Review. You can access the necessary forms from the online Site Plan Package. Planning Clearance may take up to 2 weeks from time of application.

Zoning and Comprehensive Plan

| Zone: | MH |
| Comprehensive Plan: | MH |
| Subdivision: | CRUMLINE LADUE DLC |
| Short Plat/Large Lot #: |  |
| Abbreviated Legal: | SUB: CRUMLINE LADUE DLC DESC: T-2.9 EXC |
| Acres: | 86.81 |

Critical Areas

- Fish and Wildlife Conservation Areas
  - Riparian Shoreline Stream: No
  - Riparian Fish Bearing Stream: Yes
  - Riparian Non Fish Bearing Stream: Yes
  - Riparian Habitat: Yes
  - Shorelines Jurisdictions: No
  - PHS: No
  - Stormwater: No

Geologically Hazardous Areas

- Deep Seated Landslide: No
- Deep Seated Landslide Scarp: No
- Shallow Landslides: No
- Sag Ponds: No
- Potentially Unstable Slopes: No
- Slopes 80%: No
- Slopes 60-80%: Yes
- Slopes 45-60%: Yes
- Slopes 30-45%: Yes
- Mine Hazards: No
- Volcanic Hazards: No

Wetlands

- NWI Wetlands: Yes
- Hydric Soils: Yes

Other

- Timber Moratorium: No

Riparian Habitat Area (RHA): Areas adjacent to streams or rivers that Influence the aquatic ecosystem by providing habitat, shade, nutrients, organic or inorganic debris, and woody material. The size of the RHA is dependent on the type of stream associated with it.

Shoreline Stream: A stream or water body that is designated a 'Shoreline of the State' by the WAC. Standard RHA width for a Type 1(S) Stream is 150 feet as measured from the ordinary high water mark. Also see 'Shorelines Jurisdiction'.

Fish Bearing Stream: A stream that flows perennially and contains fish and/or potential fish habitat. Standard RHA width for Type 3(F) Fish Bearing Stream is 100 feet as measured from the ordinary high water mark.

Non Fish Bearing Stream: A stream that flows either seasonally or perennially, but does not contain fish and does not meet the physical criteria for a fish-bearing stream. Standard RHA width for a non fish bearing stream is 50 feet as measured from the ordinary high water mark.

Shorelines Jurisdiction: All of the water areas of the state, including reservoirs, and the associated shorelands, together with the lands underlying them. Development within 200 feet of the Ordinary High Water Mark or within the floodplain of the water body is regulated by Clallam County's Shoreline Master Program.

Priority Habitat Species (PHS): Habitat areas with unique or significant value to one or more priority species as classified by the State Department of Fish and Wildlife.

Wetlands: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Buffer requirements may vary, and are determined by the type of wetland and proposed development activity.

Hydric Soils: A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils may indicate the presence of a wetland area.

Stormwater: Areas of the unincorporated, urbanized areas of Clallam County that are subject to the requirements and provisions of the Clallam County Stormwater Management Ordinance.

Geologically Hazardous Areas: Areas potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. These may include areas with active or inactive landslides, active or inactive scarps, and potentially unstable slopes as identified on the adopted landslide inventory maps.

Counter Complete
Ready for Permit Application

Printed: 04/04/2017 09:56:26 AM
# EPIC Planning Clearance Information

**Status:** Red

**Parcel:** 619530400

**Owner:** NORTHWEST ALLOYS INC

**Site Address:** 4029 INDUSTRIAL WAY

Proceed to the Building and Planning Department for a Planning Clearance Review. You can access the necessary forms from the online Site Plan Package. Planning Clearance may take up to 2 weeks from time of application.

## Zoning and Comprehensive Plan

<table>
<thead>
<tr>
<th>Zone:</th>
<th>MH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive Plan:</td>
<td>MH</td>
</tr>
<tr>
<td>Subdivision:</td>
<td>CRUMLINE LADUE DLC</td>
</tr>
<tr>
<td>Short Plat/Large Lot #:</td>
<td></td>
</tr>
<tr>
<td>Abbreviated Legal:</td>
<td></td>
</tr>
<tr>
<td>SUB:CRUMLINE LADUE DLC DESC: T-9A SECT,</td>
<td>271.55</td>
</tr>
<tr>
<td>Acres:</td>
<td></td>
</tr>
</tbody>
</table>

## Critical Areas

### Fish and Wildlife Conservation Areas

- **Riparian Shoreline Stream:** No
- **Riparian Fish Bearing Stream:** Yes
- **Riparian Non Fish Bearing Stream:** Yes
- **Riparian Habitat:** Yes
- **Shoreline Jurisdictions:** No
- **PHS:** No
- **Stormwater:** Yes

## Geologically Hazardous Areas

- **Deep Seated Landslide:** No
- **Deep Seated Landslide Scarp:** No
- **Shallow Landslides:** No
- **Sag Ponds:** No
- **Potentially Unstable Slopes:** No
- **Slopes 80%:** Yes
- **Slopes 60-80%:** Yes
- **Slopes 45-60%:** Yes
- **Slopes 30-45%:** Yes
- **Mine Hazards:** No
- **Volcanic Hazards:** No

## Wetlands

| NWI Wetlands: | Yes |
| Hydric Soils: | Yes |

## Other

- **Timber Moratorium:** No

---

**Riparian Habitat Area (RHA):** Areas adjacent to streams or rivers that influence the aquatic ecosystem by providing habitat, shade, nutrients, organic or inorganic debris, and woody material. The size of the RHA is dependent on the type of stream associated with it.

**Shoreline Stream:** A stream or water body that is designated a "Shoreline of the State" by the WAC. Standard RHA width for a Type 1(S) Stream is 150 feet as measured from the ordinary high water mark. Also see "Shorelines Jurisdiction."

**Fish Bearing Stream:** A stream that flows perennially and contains fish and/or potential fish habitat. Standard RHA width for Type 3(F) Fish Bearing Stream is 100 feet as measured from the ordinary high water mark.

**Non Fish Bearing Stream:** A stream that flows either seasonally or perennially, but does not contain fish and does not meet the physical criteria for a fish-bearing stream. Standard RHA width for a non fish bearing stream is 50 feet as measured from the ordinary high water mark.

**Shorelines Jurisdiction:** All of the water areas of the state, including reservoirs, and the associated shorelands, together with the lands underlying them. Development within 200 feet of the Ordinary High Water Mark or within the floodplain of the water body is regulated by Cowitz County's Shoreline Master Program.

**Priority Habitat Species (PHS):** Habitat areas with unique or significant value to one or more priority species as classified by the State Department of Fish and Wildlife.

**Wetlands:** Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Buffer requirements may vary, and are determined by the type of wetland and proposed development activity.

**Hydric Soils:** A hydric soil is a soil that forms under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils may indicate the presence of a wetland area.

**Stormwater:** Areas of the unincorporated, urbanized areas of Cowitz County that are subject to the requirements and provisions of the Cowitz County Stormwater Management Ordinance.

**Geologically Hazardous Areas:** Areas potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. These may include areas with active or inactive landslides, active or inactive scarps, and potentially unstable slopes as identified in the adopted landslide inventory maps.