

4.3 Wetlands

Wetlands provide natural beauty, as well as functions and values that sustain the health of human and natural communities. They can form a regularly saturated transition between surface waters and uplands. These wet soils support a diversity of plants and animals that are adapted to these conditions.

For the purposes of this assessment, wetlands refer to areas that meet the federal definition of wetlands under the U.S. Army Corps of Engineers (Corps) *Wetlands Delineation Manual* (Environmental Laboratory 1987) as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Environmental Laboratory 2010). Wetlands were identified in the field between 2011 and 2013 by Grette Associates (Grette Associates 2014a, 2014b, 2014c, 2014d, 2014e, 2014f, and 2014g).

This section describes wetlands in the study area. It then describes impacts on wetlands that could result from construction and operation of the Proposed Action and under the No-Action Alternative. This section also presents the measures identified to mitigate impacts resulting from the Proposed Action.

Impacts on ditches and stormwater conveyance features or *other waters* are also presented as described in the Grette Associates documents referenced in Section 4.3.3.1, *Information Sources*. No determination of federal jurisdiction over these types of features is implied by their inclusion herein. The existing conditions and impacts within the Columbia River are assessed in Section 4.2, *Surface Water and Floodplains*.

4.3.1 Regulatory Setting

Laws and regulations relevant to wetlands are summarized in Table 4.3-1. This section is largely focused on wetlands as a subset of waters of the United States, and thus, subject to Section 404 of the Clean Water Act as described in Table 4.3-1. Ditches, channels, and stormwater conveyance features that qualify as waters of the United States are generally subject to the same Clean Water Act requirements.

Table 4.3-1. Regulations, Statutes, and Guidelines for Wetlands

Regulation, Statute, Guideline	Description
Federal	
Clean Water Act (33 USC 1251 <i>et seq.</i>)	Section 401 (water quality certification) requires Water Quality Certification from the state for activities requiring a federal permit or license to discharge pollutants into a water of the United States. Certification attests the state has reasonable assurance the proposed activity will meet state water quality standards. Section 402 (33 USC 1342) establishes the NPDES program, under which certain discharges of pollutants into waters of the United States are regulated. Section 404 regulates the discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands.

Regulation, Statute, Guideline	Description
State	
Washington State Shoreline Management Act (RCW 90.58)	Requires cities and counties, in partnership with Ecology, (through their SMPs) to protect shoreline natural resources against adverse impacts.
Hydraulic Code Rules (RCW 77.55, WAC 220-660)	Issued by WDFW for projects with elements that may affect the bed, bank, or flow of a water of the state or productive capacity of fish habitat. Considers effects on riparian and shoreline/bank vegetation in issuance and conditions of the permit, including for the installation of piers, docks, pilings and bank armoring and crossings of streams and rivers (including culverts).
Local	
Cowlitz County Critical Areas Ordinance (19.15)	Regulates activities within and adjacent to critical areas including vegetation occurring in wetlands and their buffers, fish and wildlife habitat conservation areas (including streams and their buffers), frequently flooded areas, and geological hazard areas.
Cowlitz County Shoreline Master Program (19.20)	Regulates development in the shoreline zone, including the shoreline of the Columbia River, a Shoreline of Statewide Significance.
Notes: USC = United States Code; NPDES = National Pollutant Discharge Elimination System; RCW = Revised Code of Washington; SMP = Shoreline Management Program; WAC = Washington Administrative Code; WDFW = Washington Department of Fish and Wildlife	

4.3.2 Study Area

The study area for direct impacts on wetlands is the project area (Figure 4.3-1). The study area for indirect impacts is the project area and the immediate vicinity, where wetlands might be affected by construction or operation of the proposed export terminal.

4.3.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on wetlands associated with the construction and operation of the Proposed Action and No-Action Alternative.

4.3.3.1 Information Sources

The following sources of information were used to identify the potential impacts of the Proposed Action and No-Action Alternative on wetlands in the study area.

- Two reconnaissance level site visits conducted by ICF wetland biologists on April 8 and December 11, 2014, to view the areas determined to be wetland by Grette Associates.
- Reports prepared by Grette Associates and provided by the Applicant as part of the permit application materials.
 - *Coal Export Terminal Wetland and Stormwater Ditch Delineation Report–Parcel 619530400 and associated appendices* (Grette Associates 2014a)

- *Bulk Product Terminal, Wetland and Stormwater Reconnaissance Report–Parcel 10213* (Grette Associates 2014b)
- *Bulk Product Terminal Wetland and Stormwater Ditch Delineation Report–Parcel 61953* (Grette Associates 2014c)
- *Coal Export Terminal Wetland Impact Report–Parcel 619530400* (Grette Associates 2014d)

The Grette Associates documents report the presence of field-delineated wetlands in the study area using the *Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (U.S. Army Corps of Engineers 2010).

Wetlands were classified by vegetation type using the U.S. Fish and Wildlife *Classification of Wetlands and Deep Water Habitat* (Cowardin et al. 1979). The regulatory category of wetlands in Washington State is determined per the Washington State Department of Ecology (Ecology) *Washington State Wetland Rating System for Western (or Eastern) Washington* (Rating System), as applicable (Hruby 2006).

The category and functions of wetlands were evaluated using the Rating System. Functions evaluated included water quality functions (the ability to filter sediment and pollutants), habitat functions (a place for plants and animals to live and grow), and hydrologic functions (the interaction between ground or surface water and the landscape). Based on the Rating System, wetlands are rated as providing low, moderate, or high functions depending on the following characteristics.

- The ability to retain water for sufficient periods to filter out pollutants.
- How diverse the wetlands vegetation and structure is to provide wildlife habitat and its connectivity to other wetlands or upland habitat.
- The position of the wetland in the landscape relative to its ability to store and retain surface water (i.e., the wetland’s ability to act as a natural sponge to store water to prevent flooding and to gradually release water back to streams and other aquatic areas).
- The ability to prevent erosion caused by moving water.

Information regarding the existing conditions relative to ditches and stormwater conveyance features or other waters is presented in Section 4.2, *Surface Water and Floodplains*.

4.3.3.2 Impact Analysis

The following methods were used to evaluate the potential impacts of the Proposed Action and No-Action Alternative on wetlands. For direct impacts, the analysis assumes best management practices would be incorporated into the design, construction, and operation of the proposed coal export terminal.

All quantitative and qualitative impacts on wetlands are summarized as described in the Grette Associates documents referenced in Section 4.3.3.1, *Information Sources*. Direct construction impacts on wetlands were reported for wetlands in the project area. All wetlands within the project area were considered permanently affected, because most would be replaced with gravel pads, stockpiles, railroad tracks, buildings, pavement, and other project features. Direct wetland impacts would be mitigated consistent with current federal, state, and local mitigation requirements.

Impacts on ditches, stormwater conveyance features or other waters are also summarized. No determination of federal jurisdiction over these types of features is implied by their inclusion herein.

4.3.4 Existing Conditions

Wetlands, as defined by the Corps' wetland delineation manual (Environmental Laboratory 1987, 2010) are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

The Washington State Growth Management Act defines wetlands as:

areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands. (RCW 36.70A.030)

To identify areas that meet the wetland definition per the Corps wetland delineation manual (Environmental Laboratory 1987), scientists look for specific field characteristics of soil, hydrology (i.e., flooding, ponding, or groundwater saturating the soil), and vegetation that indicate an area is a wetland. Indicators of all three conditions (soil, hydrology, and vegetation) must be present for an area to be considered a wetland.

Approximately 26.93 acres of wetlands were identified in the study area. The distribution of wetlands in the study area is shown in Figure 4.3-1. Wetlands in the study area are identified using letters. Table 4.3-2 summarizes the wetlands by their location, vegetation classification, hydrogeomorphic classification (i.e., where the wetland fits on the landscape position and associated hydrology), regulatory category, and acreage. Regulatory category refers to the system of ascribing a ranked regulatory protection category from one to four (I to IV) to wetlands based on their functions, as derived from the *Washington State Wetland Rating System for Western Washington* (Hruby 2006). Category I wetlands have the highest level of function, are afforded the widest buffers, and impacts on such wetlands require the largest amount of compensatory mitigation. Category IV wetlands have the lowest level of function, are afforded more narrow buffers, and impacts on such wetlands require a lower amount of compensatory mitigation.

All wetlands in the study area are considered depressional from a hydrogeomorphic classification perspective; i.e., a classification based on where the wetlands occur on the landscape and their resulting physical characteristics.

Additional wetlands outside of the direct and indirect impacts study areas were delineated in the Applicant's leased area. These wetlands are shown in Figure 4.3-1 and listed in Table 4.3-3.

Under the Cowardin system, wetlands are classified by dominant vegetation. For example, wetlands can be classified as forested (woody plants over 20 feet tall), scrub-shrub (woody plants up to 20 feet tall), or emergent vegetation (non-woody plants like grasses, sedges, rushes, and herbaceous flowering plants). Individual wetlands can comprise more than one vegetation type. Wetlands in the study area are organized by Cowardin vegetation classification.

Figure 4.3-1. Wetlands in the Study Area

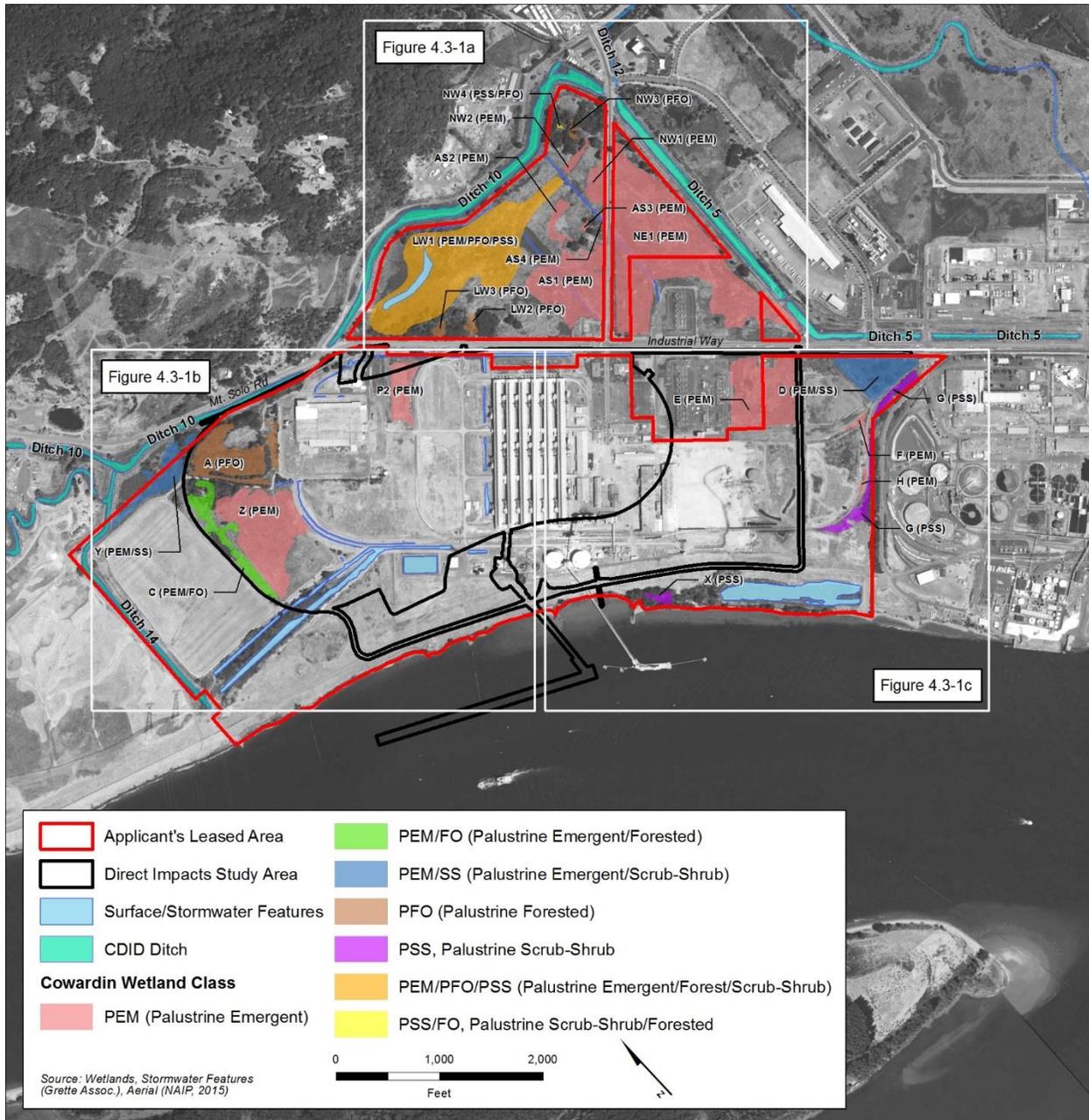


Figure 4.3-1a. Wetlands in the Study Area—North

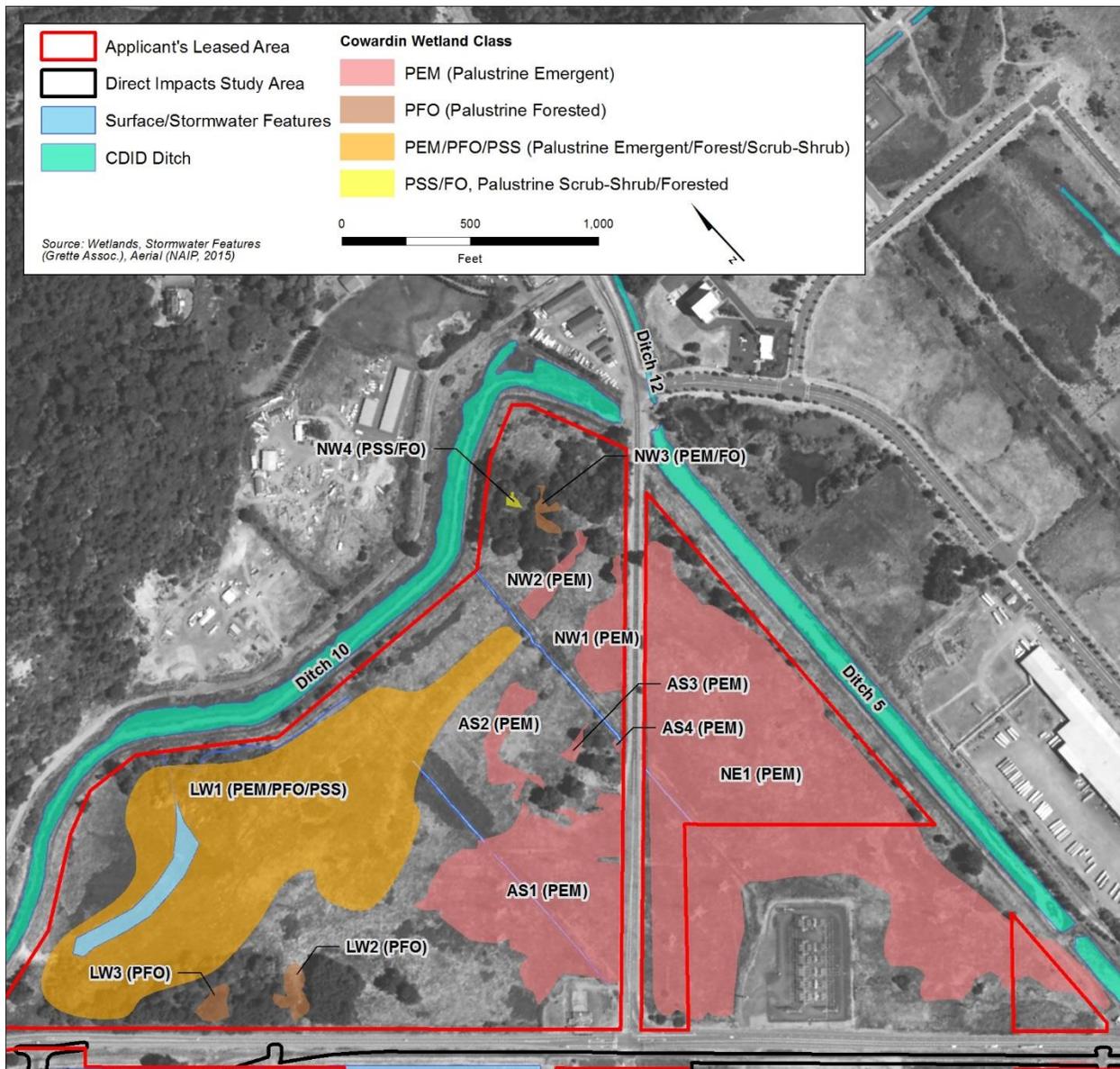


Figure 4.3-1b. Wetlands in the Study Area—West

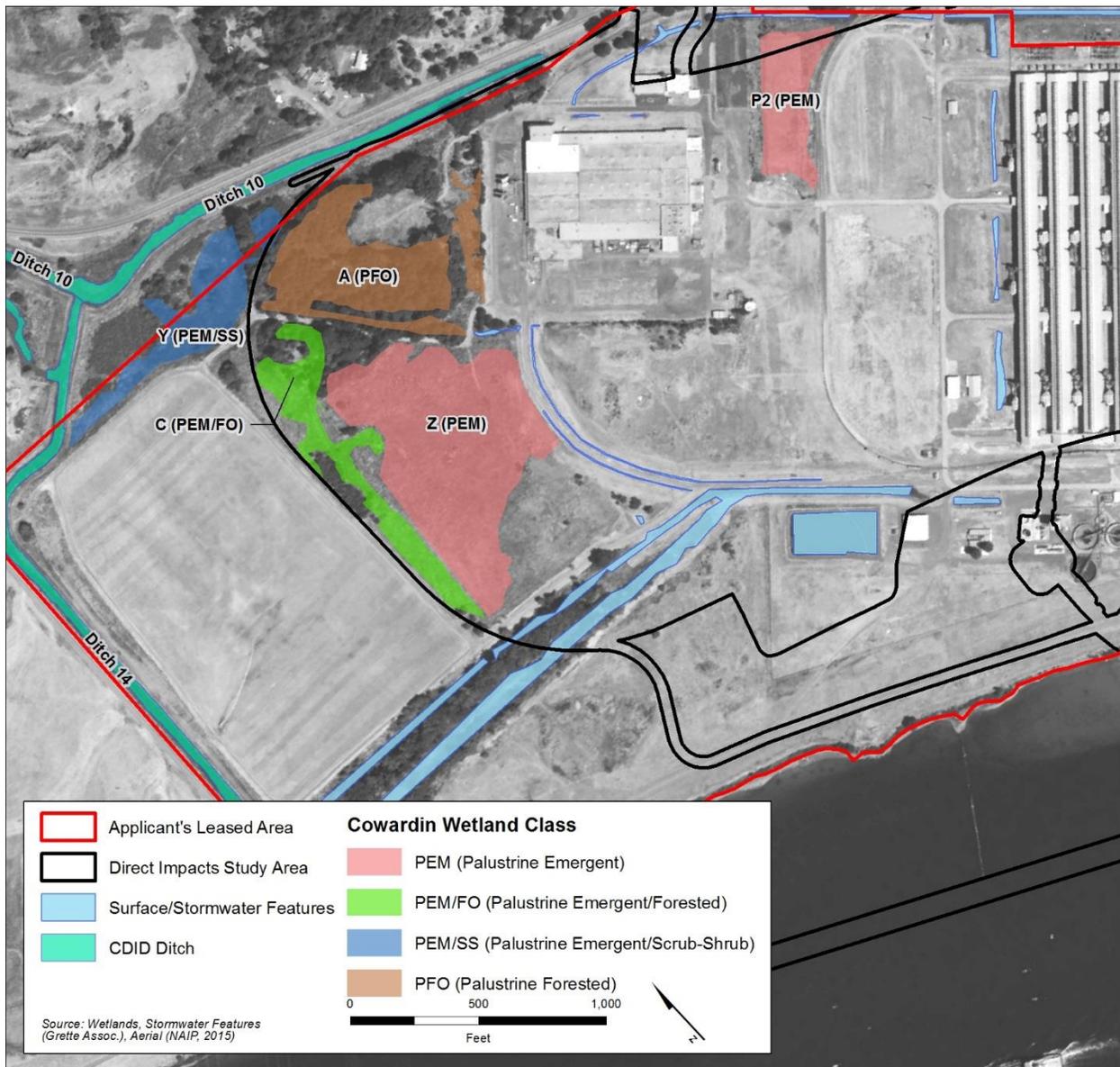


Figure 4.3-1c. Wetlands in the Study Area—East

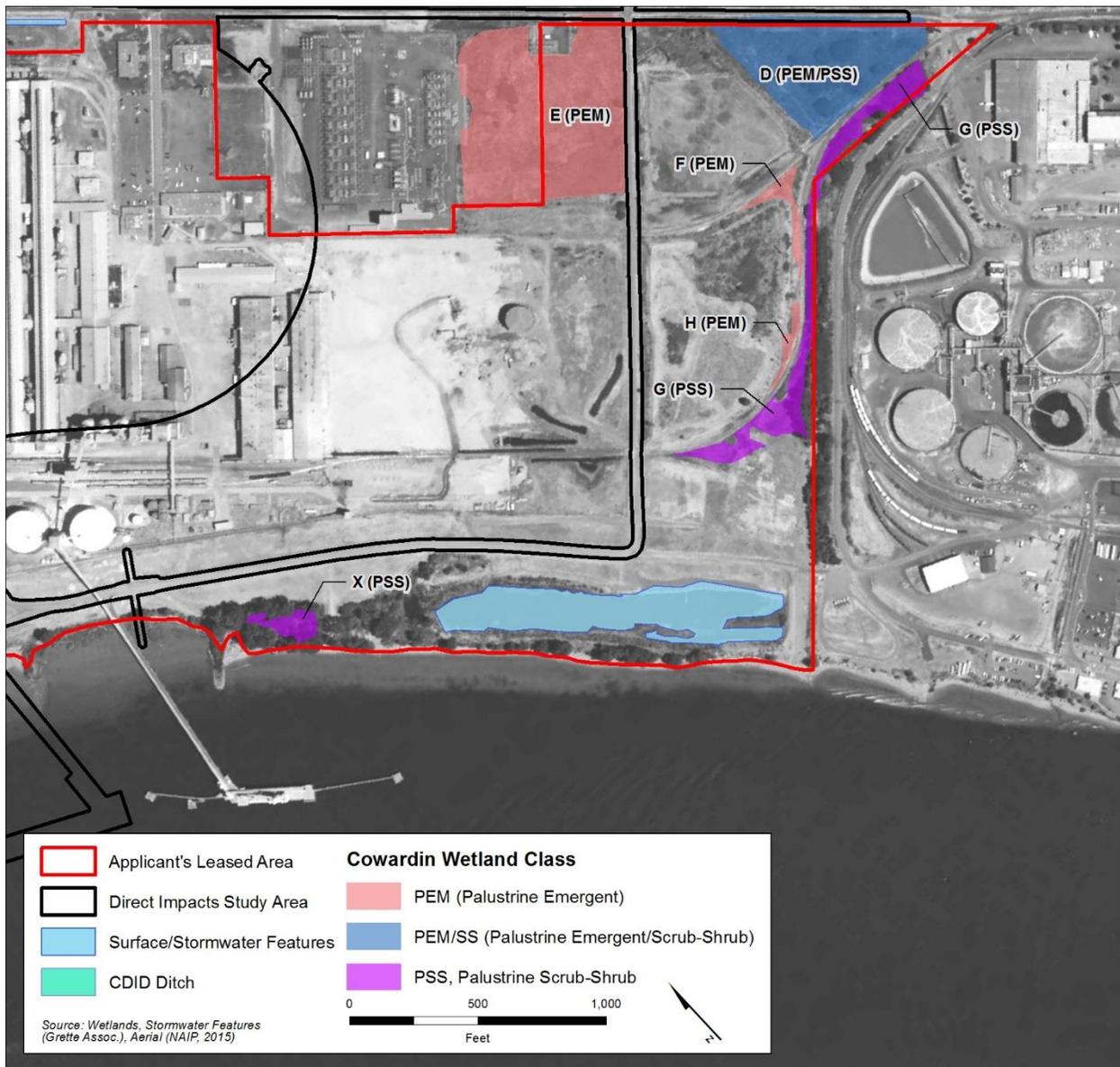


Table 4.3-2. Wetlands Identified in the Study Area

Wetland	Location (Parcel)	Cowardin Classification ^a	HGM Classification ^b	Category ^c	Area (acres) ^d
A	619530400	PFO	Depressional	III	6.28
C	619530400	PEM/PFO	Depressional	III	3.38
Y	619530400	PEM/PSS	Depressional	III	3.40
Z	619530400	PEM	Depressional	III	11.22
P2	619530400	PEM	Depressional	IV	2.65
Total					26.93

Notes:

^a Cowardin classification per Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al. 1979). Values include PFO = palustrine forested; PSS = palustrine scrub-shrub; and PEM = palustrine emergent

^b Hydrogeomorphic (HGM) classification per the Washington State Wetland Rating System for Western Washington (Hruby 2006).

^c Wetland category determined by Grette Associates using the Washington State Wetland Rating System for Western Washington (Hruby 2006).

^d Acreages as reported by Grette Associates 2014 a, b, c.

Table 4.3-3. Wetlands Outside the Study Areas in the Applicant’s Leased Area

Wetland	Location (Parcel)	Cowardin Classification ^a	HGM Classification ^b	Category ^c	Area (acres) ^d
D	61953	PEM/PSS	Depressional	III	5.43
E	61953, 61954	PEM	Depressional	III	9.46
F	61953	PEM	Depressional	III	0.45
G	61953	PSS	Depressional	III	2.60
H	61953	PEM	Depressional	III	0.24
X	61950	PSS	Riverine	III	0.44
AS1	10213	PEM	Depressional	III	8.86
AS2	10213	PEM	Depressional	IV	0.94
AS3	10213	PEM	Depressional	IV	0.12
AS4	10213	PEM	Depressional	III	0.02
NW1	10213	PEM	Depressional	III	1.38
NW2	10213	PEM	Depressional	III	0.50
NW3	10213	PFO	Depressional	IV	0.19
NW4	10213	PSS/PFO	Depressional	IV	0.05
NE1	10213	PEM	Depressional	III	29.48
LW1 ^e	10213	PEM/PFO/PSS	Depressional	III	-
LW2 ^e	10213	PFO	Depressional	III	-
LW3 ^e	10213	PFO	Depressional	III	-
Total					60.16

Notes:

^a Cowardin classification per Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al. 1979). Values include PFO = palustrine forested; PSS = palustrine scrub-shrub; and PEM = palustrine emergent

^b Hydrogeomorphic (HGM) classification per the Washington State Wetland Rating System for Western Washington (Hruby 2006).

^c Wetland category determined by Grette Associates using the Washington State Wetland Rating System for Western Washington (Hruby 2006).

^d Acreages as reported by Grette Associates 2014 a, b, c.

^e These wetlands correspond to the three areas on Parcel 10213 that Grette Associates identified as *likely wetland* areas. Grette Associates did not report acreages for these areas.

4.3.4.1 Forested Wetlands

Approximately 6.28 acres of forested wetland occur in the study area as Wetland A. (Figure 4.3-1). This wetland is depressional and supported primarily by high groundwater and direct precipitation. Common plant species observed in the forested wetland include a predominately native overstory of black cottonwood (*Populus trichocarpa* ssp. *balsamifera*), Pacific willow (*Salix lucida*), red alder (*Alnus rubra*), and Oregon ash (*Fraxinus latifolia*) trees, overlying a shrub layer dominated by salmonberry (*Rubus spectabilis*) and nonnative Himalayan blackberry (*Rubus armeniacus*). Reed canarygrass (*Phalaris arundinacea*), an invasive grass, is the common herbaceous plant.

4.3.4.2 Emergent/Forested Wetlands

Approximately 3.38 acres of emergent/forested wetlands occur in the study area as Wetland C (Figure 4.3-1). This wetland is depressional and supported primarily by high groundwater and direct precipitation. The emergent portion of the wetland is dominated by reed canarygrass. Common plant species observed in the forested portion include a predominately native overstory of black cottonwood, Pacific willow, red alder, and Oregon ash trees, overlying a shrub layer dominated by salmonberry and nonnative Himalayan blackberry.

4.3.4.3 Emergent/Scrub-Shrub Wetlands

Approximately 3.40 acres of emergent/scrub-shrub wetland occur in the study area as Wetland Y. Wetland Y is located north of the closed Black Mud Pond facility, and is the only wetland in the direct impacts study area that extends outside of the study area (Figure 4.3-1). This wetland is depressional and supported primarily by high groundwater and direct precipitation. The scrub-shrub component is dominated by Himalayan blackberry, red osier dogwood (*Cornus sericea*), Douglas spirea (*Spiraea douglasii*), and narrowleaf cattail (*Typha angustifolia*). The emergent component is dominated by reed canarygrass and an unidentified bryophyte; some nonnative narrowleaf cattail is also present.

4.3.4.4 Emergent Wetlands

Approximately 13.87 acres of emergent wetland occur in the study area as Wetlands Z and P2 (Figure 4.3-1). These wetlands are depressional and supported primarily by high groundwater and direct precipitation. Wetland Z is dominated by reed canarygrass and soft rush (*Juncus effusus*) and contains several brush piles left over from past clearing activities. Wetland P2 is also dominated by reed canarygrass and soft rush.

4.3.4.5 Wetland Ratings and Functions

The wetlands in the study area were rated as either Category III or Category IV based on their generally low to moderate level of function (Grette 2014a, 2014c). Wetlands A, C, Z, Y and P2 generally provide low to moderate water quality, habitat, and hydrology functions (Grette 2014a). These wetlands filter out sediment from stormwater runoff and retain stormwater and overland flow during heavy rain events. Some of the wetlands also provide pollutant filtration and groundwater infiltration functions. Wildlife functions include habitat for large and small mammal foraging and cover; passerine, waterfowl, and raptor foraging and nesting; and amphibian foraging, breeding and refuge. Wetland Y provides the most potential to retain stormwater during heavy rain events due to its depth.

4.3.4.6 Ditches and Stormwater Conveyance Features or Other Waters

Ditches and stormwater conveyance features present within the study area include the Interceptor Ditch/U Ditch, and several narrow stormwater ditches that cross through the study area (Figure 4.3-1). These features, as well as the Columbia River, are described for the Proposed Action in Section 4.2, *Surface Waters and Floodplains*.

4.3.5 Impacts

The following impacts on wetlands could result from construction and operation of the Proposed Action and No-Action Alternative.

4.3.5.1 Proposed Action

The following sections describe the potential impacts to wetlands from construction and operation of the Proposed Action.

Construction—Direct Impacts

Construction would occur in the Columbia River and on currently developed and disturbed land adjacent to the Columbia River. Impacts would include permanent fill and conversion to upland, and temporary alteration of vegetation and habitat conditions.

Permanently Fill Wetlands and Other Waters Resulting in Loss of Acreage

Construction of the Proposed Action would result in the permanent loss of 24.10 acres of wetlands (Table 4.3-4). Construction activities would permanently fill Wetlands A, C, Z, and P2 and a portion of Wetland Y (Figure 4.3-2) (Grette Associates 2014d) to construct rail lines and coal handling facilities. Because the wetland would be permanently filled, there is no requirement for buffers. Construction of the Proposed Action would not directly affect wetlands north of Industrial Way or the majority of wetlands at the east end of the study area.

Table 4.3-4. Wetland and Other Waters Impacts from the Proposed Action

Wetland/Other Waters	Cowardin Classification	Category	Impact Type	Impact Area
A	PFO	III	Fill	6.28
C	PEM/PFO	III	Fill	3.38
Y	PEM/PSS	III	Fill	0.57
Z	PEM	III	Fill	11.22
P2	PEM	IV	Fill	2.65
Total				24.10

Notes:

PFO = palustrine forested; PEM = palustrine emergent; PSS = palustrine scrub-shrub

Figure 4.3-2. Wetlands Affected by the Proposed Action



There are jurisdictional wetlands north of Industrial Way, which are outside the project area. These wetlands are considered Category III and IV wetlands (Grette Associates 2014b). The Cowlitz County Code (CCC) Critical Areas Ordinance 19.15.120.C (4)(a) requires buffers around wetlands, and buffers for Category III and IV wetlands can range from 25 to 150 feet depending on the wetland function and land use intensity. However, CCC 19.15.120.C (4)(a) does not require wetland buffers to extend beyond existing natural or human-made barriers (e.g., a paved road), which isolate the area of the wetland resource. Industrial Way serves as this human-made barrier for those off-site wetlands to the north of Industrial Way, and the associated buffers do not extend beyond that point. Therefore, construction of the Proposed Action would not result in impacts on these adjacent wetland buffers (Grette Associates 2014d).

In addition, construction would permanently fill 5.17 acres of ditches that convey stormwater runoff (Grette Associates 2014d), including the eastern half of the Interceptor/U Ditch, portions of the ditch along the south edge of Industrial Way on the BPA parcel, and interior drainage ditches (Grette Associates 2014d). Refer to Section 4.2, *Surface Water and Floodplains*, for more information on ditches and other surface waters.

Permanent Loss of Wetland Functions

Placement of fill material to construct the proposed coal export terminal would result in the permanent total loss of wetland functions across 24.10 acres of wetlands (Table 4.3-4). The functions most affected would be water quality and wildlife habitat, as evidenced by the rating system scores for the affected wetlands (Grette Associates 2014d). Wetland scores for the Category III wetlands are highest for the water quality and wildlife habitat functions. Wetland scores for Wetland P2 (the only Category IV wetland) were low for all three functions.

All water quality and hydrology functions would be lost from Wetlands A, C, Z, and P2, with a portion of those functions lost in Wetland Y. Construction of the Proposed Action would not displace water into surrounding areas, and stormwater runoff currently discharging into these wetlands would be redirected into an on-site stormwater treatment facility. Stormwater that currently discharges into Wetland Y through Outfall 005 would be rerouted to proposed stormwater facilities (refer to Section 4.2, *Surface Water and Floodplains*, for more information). However, since this is a minor source of hydrology compared with groundwater and surface water from ditches, it is expected that hydrology in the unfilled portion of Wetland Y would not be affected (Grette Associates 2014d).

While wetlands in the study area do provide some wildlife habitat, as described in Section 4.8, *Wildlife*, this function is limited (Grette Associates 2014d). Construction of the Proposed Action would destroy all habitat functions in filled wetlands. Construction would also destroy a forested portion of Wetland Y, which would reduce that wetland's habitat value from moderate to low.

Construction—Indirect Impacts

Construction of the Proposed Action would permanently fill 0.57 acre of Wetland Y, leaving 2.83 acres of Wetland Y unfilled and intact. The primary indirect impact on this wetland would be the degradation or alteration of wetland functions. While other indirect impacts, such as sedimentation from stormwater runoff and fuel spills, could also occur, implementation of best

management practices, such as silt fencing, would be required by various federal, state, and local permits to minimize impacts.

Alteration or Degradation of Wetland Functions

Construction could alter or degrade wildlife and hydrologic functions in Wetland Y. These indirect impacts are expected to be minor given Wetland Y's low rating for each of these functions. Wildlife use would likely be slightly reduced due to a smaller habitat area. Additionally, Wetland Y would no longer have nearby habitat connectivity with Wetland A (which would be filled), further reducing Wetland Y's functionality.

Wetland Y's hydrologic function is not expected to change much as a result of construction because it is located in a low area and hydrology is driven primarily by groundwater and precipitation. Temporary fluctuations in groundwater could occur during construction activities if any excavating activities take place near Wetland Y. However, if this impact were to occur it would be temporary, and Wetland Y's currently low hydrologic functional rating would not be significantly altered. Indirect construction impacts on water quality functions are unlikely because the wetland would be protected by adherence to a Stormwater Pollution Prevention Plan and NPDES Construction Stormwater Permit conditions.

Operations—Direct Impacts

The Proposed Action would have no direct impacts on wetlands during operations.

Operations—Indirect Impacts

Wetland Y vegetation would likely be affected by coal dust. The impact of coal dust on vegetation would depend on dust load, climatic conditions, and physical characteristics of the vegetation. Impacts could include blocked stomata, which would reduce respiration and/or decrease transpiration; altered leaf surface reflectance and light absorption; and increased leaf temperature due to optical properties of the dust (Chaston and Doley 2006; Doley 2006:38; Farmer 1993). Section 4.6, *Vegetation*, and the *SEPA Vegetation Technical Report* (ICF 2017), summarize studies of the impacts of dust deposition on vegetation. Coal dust deposition is discussed further in Chapter 5, Sections 5.6, *Air Quality*, and 5.7, *Coal Dust*.

4.3.5.2 No-Action Alternative

Under the No-Action Alternative, the Applicant would not construct the coal export terminal and would continue with current and future increased operations in the study area for the Proposed Action. The study area could be developed for other industrial uses including an expanded bulk product terminal or other industrial uses. If the study area is developed for another use, these activities may require permits from Ecology and the Corps. Wetlands would continue to provide functions as described in Section 4.3.4, *Existing Conditions*.

4.3.6 Required Permits

Permits to place fill in wetlands or other waters of the United States are required by federal, state, and local jurisdictions responsible for protecting waterways and water quality.

Permits for the Proposed Action would likely include the following.

- **Clean Water Act Authorization, Section 404—U.S. Army Corps of Engineers.** Construction and operation of the Proposed Action would affect waters of the United States, including wetlands. Department of the Army authorization from the Corps under Section 404 of the Clean Water Act would be required.
- **Clean Water Act Section 401 Water Quality Certification—Washington State Department of Ecology.** An Individual Water Quality Certification from Ecology under Section 401 of the Clean Water Act and a National Pollution Discharge Elimination System permit under Section 402 of the Clean Water Act would also be required for the Proposed Action.
- **Critical Areas Permit—Cowlitz County Department of Building and Planning.** Development in designated critical areas, including wetlands, requires a Critical Areas Permit from the Cowlitz County Department of Building and Planning.

Other permits and approvals not specific to wetlands may be required, but associated with the Proposed Action's location along the Columbia River, such as shoreline permits pursuant to the State Shoreline Management Act, Cowlitz County Shoreline Master Program, and City of Longview Shoreline Master Program.

4.3.7 Proposed Mitigation Measures

This section describes the proposed mitigation measures that would reduce and compensate for impacts related to wetlands from construction and operation of the Proposed Action. These mitigation measures would be implemented in addition to project design measures best management practices, and compliance with environmental permits, plans, and authorizations that are assumed as part of the Proposed Action.

Wetlands mitigation falls under the jurisdiction of the Corps, Ecology, and Cowlitz County and will be coordinated through the National Environmental Policy Act (NEPA) and permitting processes.

4.3.7.1 Applicant Mitigation

The Applicant would implement the following measures to mitigate impacts on wetlands.

MM WTL-1. Prepare a Comprehensive Mitigation Plan

The Applicant will prepare a comprehensive mitigation plan in coordination with the Corps, Ecology, and Cowlitz County to address the impacts on the 24.1 acres of wetlands affected by placement of fill from the Proposed Action. The comprehensive mitigation plan will be prepared as part of the permitting process for the Proposed Action. The mitigation plan will address the general requirements for mitigation planning consistent with all current local, state, and federal guidance and regulations. These requirements must be met before applicable permits are issued.

Mitigation actions may be implemented at one or several locations to ensure that the range of ecological functions are provided to offset identified, unavoidable project impacts and the types of wetland functions affected by the Proposed Action. The mitigation actions may include Applicant-sponsored (i.e., permittee-responsible) mitigation or use of credits from existing or proposed mitigation banks (Grette Associates 2014d). Any Applicant-sponsored mitigation will

be consistent with requirements as stipulated by the Corps, Ecology, or Cowlitz County, which could include, but is not limited to, use of ratios or a credit-debit analysis.

CCC 19.15.170 E(5) and the 2006 interagency guidance identify mitigation ratios that prescribe the acreage needed to compensate for unavoidable impacts on wetlands, depending on the type of mitigation and category of the affected wetland and the mitigation wetland. As required by agencies, the appropriate ratios will be followed for the preparation of the mitigation plan (Grette Associates 2014d). Mitigation will be developed consistent with current local, state, and federal guidance and regulations. Approval of the mitigation plan by the agencies will depend on a number of factors.

Examples of mitigation could include, but would not be limited to, the following.

- Wetland mitigation bank credits.
- Off-site permittee-responsible wetland mitigation (e.g., wetland creation, enhancement, rehabilitation).

4.3.8 Unavoidable and Significant Adverse Environmental Impacts

Compliance with laws and implementation of the mitigation measures described above would reduce and compensate for impacts on wetlands. There would therefore be no unavoidable and significant adverse environmental impacts on wetlands.