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 that are adapted to these conditions.

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

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 may also be considered jurisdictional waters of the United States by the Corps in some circumstances, and thus, may be subject to the same regulatory setting relative to the Clean Water Act.

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

Regulation, Statute, Guideline	Description
Federal	
Clean Water Act (33 USC 1251 *et seq.*)	Section 401 (water quality certification) requires that a Water Quality Certification be obtained from Ecology for any activity that requires a federal permit or license to discharge pollutants into a water of the United States. This certification attests that the state has reasonable assurance that the proposed activity will meet state water quality standards. Section 402 (NPDES permits) prohibits the discharge of any pollutant to a water of the United States without a permit. Section 402 (33 USC 1342) establishes the NPDES permitting program, under which such discharges are regulated. Section 404 regulates

Regulation, Statute, Guideline	Description
	discharges into waters of the United States and special aquatic sites, such as wetlands. Also regulates impacts on other vegetated areas such as shoreline vegetation at and below ordinary high water, and vegetated shallows waterward of the shoreline along the Columbia River.
State	
Washington State Shoreline Management Act (RCW 36.70A)	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; WDFW = Washington Department of Fish and Wildlife

4.3.2 Study Area

The study area for direct impacts on wetlands is defined as the 540-acre Applicant's leased area on the north bank of the Columbia River, just downstream from the City of Longview, in Cowlitz County.

Indirect impacts were considered for those wetlands that would be partially impacted by the Proposed Action. A general discussion related to vegetation and potential impacts from coal spills can be found in Section 4.6, *Vegetation.*

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 International 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 Ditch Delineation 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 methods as per 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 regulatory category and functions of wetlands were evaluated by Grette Associates per 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.

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 where delineated wetlands fell within the project area. All wetlands within the project area were considered permanently impacted, because they would be removed during construction and replaced with gravel pads, stockpiles, railroad tracks, buildings, pavement, and other project features. Impacts on wetland functions were qualitatively based on the wetland functions under current conditions and what functions would be lost due to direct construction impacts on those wetlands.

Impacts on ditches, stormwater conveyance features or other waters are also summarized 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.

4.3.4 Existing Conditions

This section describes the existing environmental conditions in the study area related to wetlands that could be affected by the construction and operation of the Proposed Action and the No-Action Alternative.

The existing conditions related to wetlands in the study area are described below. Wetlands, as defined by the Corps' wetland delineation manual (Environmental Laboratory 1987, 2010) are areas that are inundated or saturated by surface or groundwater at a frequency and duration to support a prevalence of plants that are typically adapted for life in such conditions.

The Washington State definition of wetlands under the Growth Management Act is

> 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. 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.

To identify areas that meet these definitions, 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. Typically, indicators of all three conditions (soil, hydrology, and vegetation) must be present for an area to be considered a wetland.

Although the Corps' manual notes that wetlands include areas such as swamps, marshes, and bogs that are typically wet year round, there are areas that may be flooded, ponded, or saturated for a relatively short period of time (i.e., at least 14 consecutive days) during the growing season that still meet the definition of a wetland and the Corps' criteria for evidence of wetland hydrology based on observable field characteristics (Environmental Laboratory 2010).

Approximately 86.95 acres of wetlands were identified in the study area, which is approximately 15% of the study area. The distribution of wetlands in the study area is shown in Figures 4.3-1 through 4.3-4. 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 are considered to 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 are considered to 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, except for one (Wetland X) 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. Wetland X is a riverine wetland as it is located in the active Columbia River floodplain and periodically affected by river flows.

Per the Cowardin system, wetlands are typically classified based on their dominant vegetation as to whether they support forested vegetation (woody plants over 20 feet tall), scrub-shrub vegetation (woody plants up to 20 feet tall), and emergent vegetation (non-woody plants like grasses, sedges, rushes, and herbaceous flowering plants). Individual wetlands may contain more than one of these habitat types. The following discussion of wetlands in the study area is organized by this vegetation classification.

Figure 4.3-1. Wetlands in the Study Area

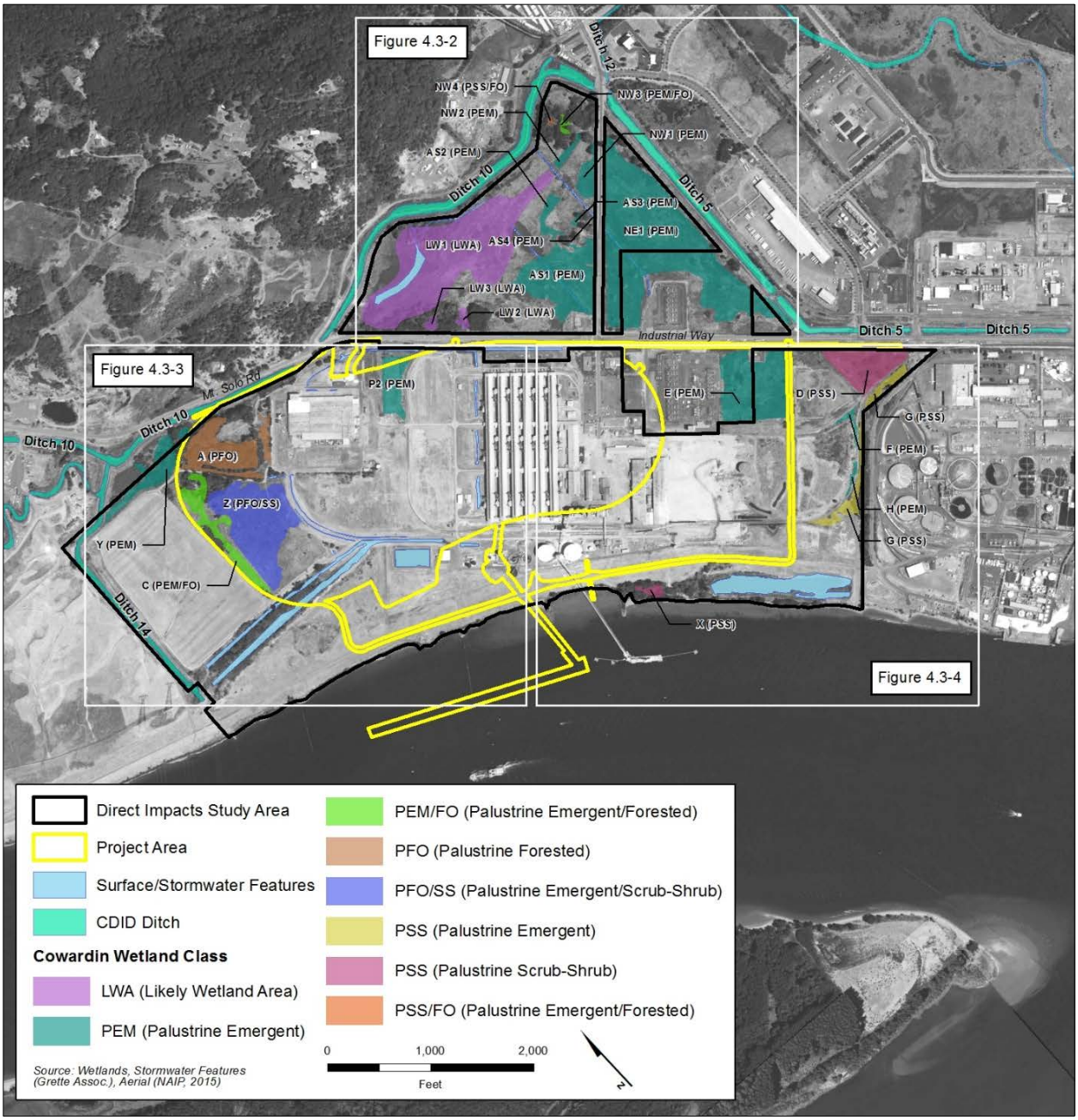


Figure 4.3-2. Wetlands in the Study Area—East

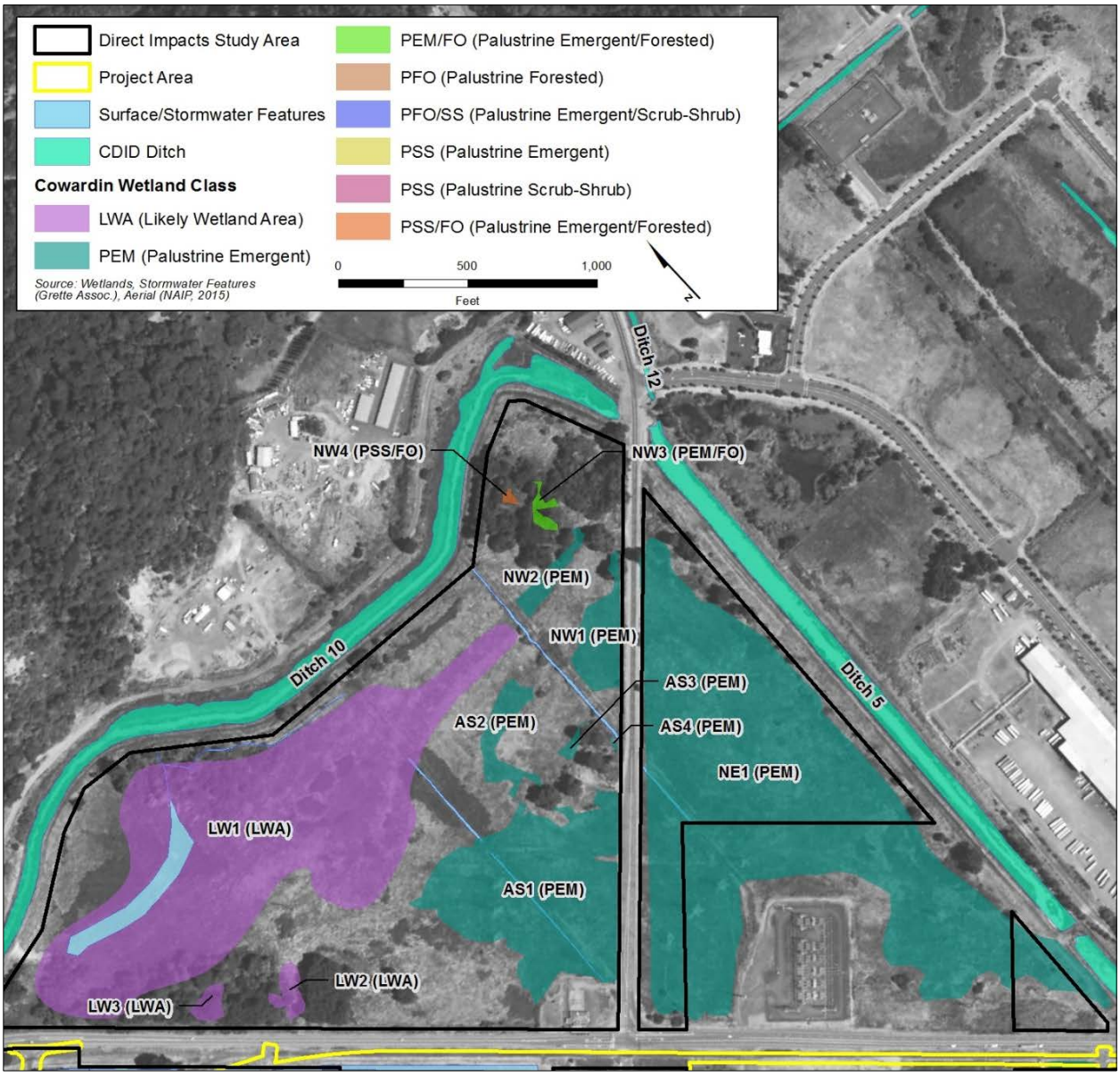


Figure 4.3-3. Wetlands in the Study Area—North

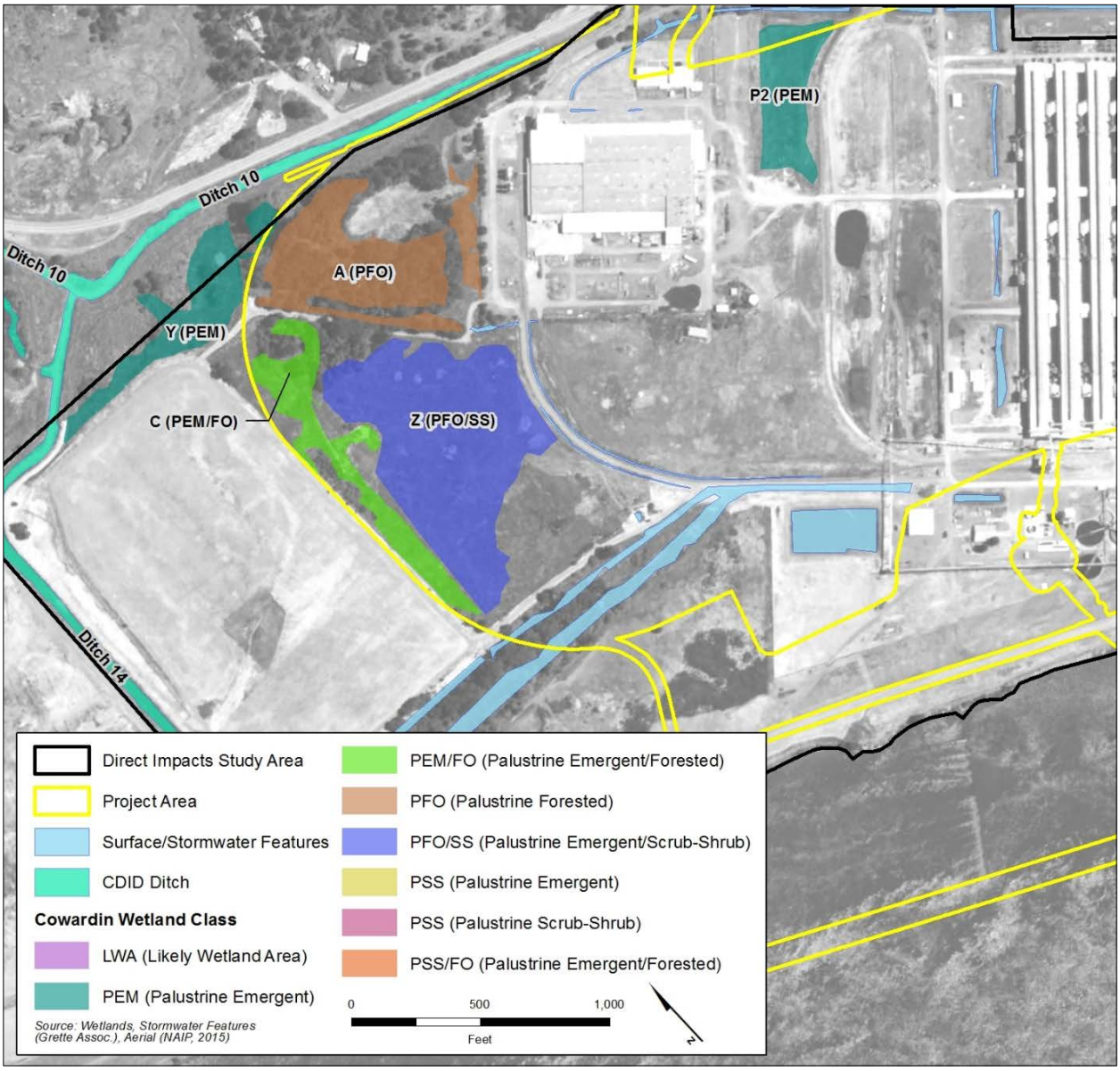


Figure 4.3-4. Wetlands in the Study Area—South

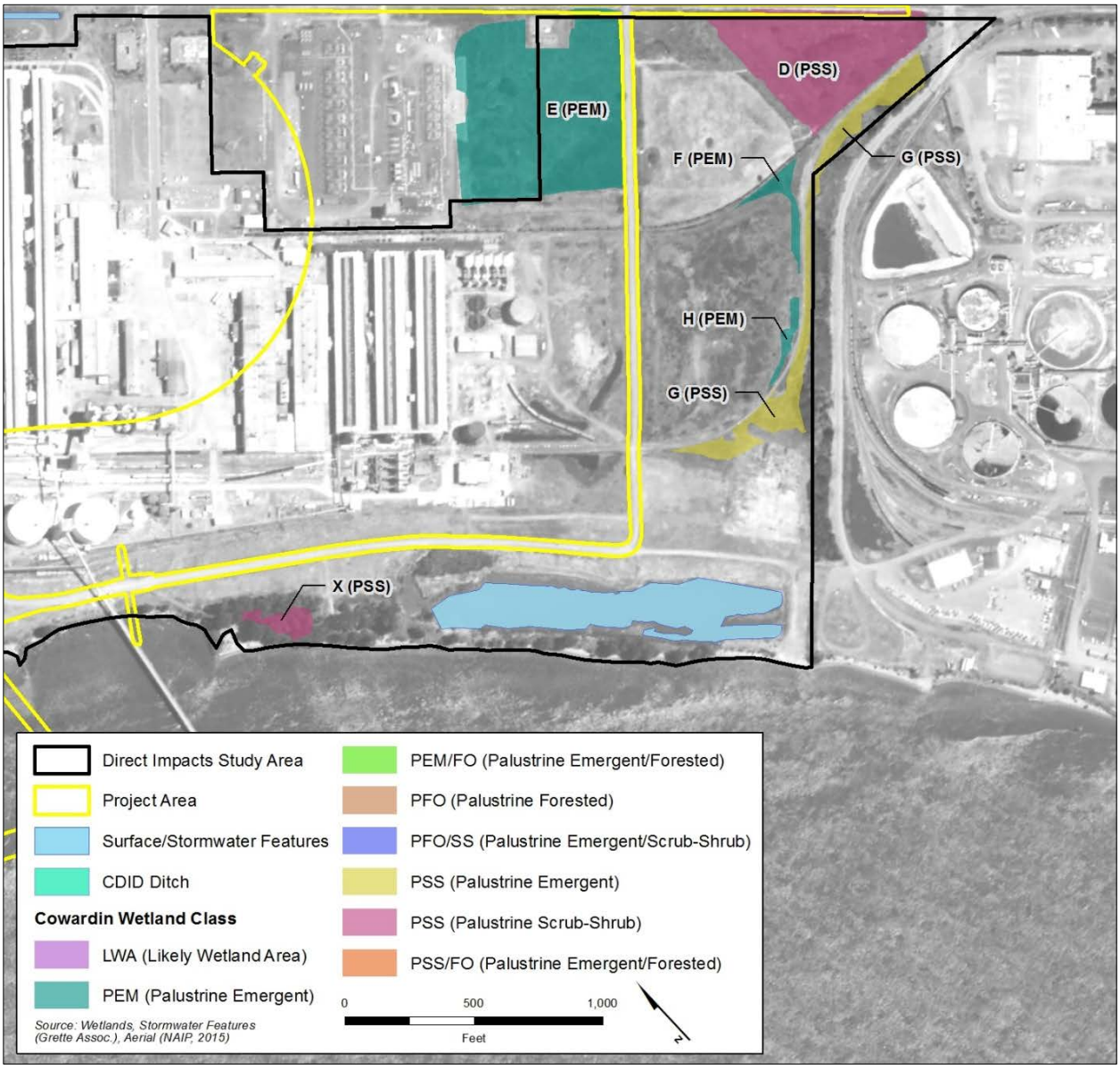


Table 4.3-2. Wetlands Identified in the Study Area

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
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
Y	619530400	PEM/PSS	Depressional	III	3.40
Z	619530400	PEM	Depressional	III	11.22
P2	619530400	PEM	Depressional	IV	2.65
AS1	10213	PEM	Depressional	III	8.72
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					**86.95**

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 8.18 acres of forested wetland occur in the study area.[1] The largest forested wetland (Wetland A) in the project area was delineated within the study area. A small forested portion of Wetland C is also located in project area (Figure 4.3-3). These wetlands are supported primarily by

[1] For wetlands consisting of multiple vegetation classes as reported by Grette (2014a), forested wetlands were calculated by estimating the area of vegetation greater than 20 feet tall (Cowardin et al. 1979).

high groundwater and direct precipitation. Additional forested wetlands (Wetlands NW3 and NW4) occur primarily in the northern portion of the study area within the Bonneville Power Administration [BPA] parcels. Small areas reported as *likely wetland* areas occur north of Industrial Way (i.e., LW2 and LW3 and portions of LW1) (Figure 4.3-2). These areas were visually assessed by Grette Associates but not formally delineated as they are outside the project area.

Common plant species observed in the forested wetlands include a predominately native overstory of black cottonwood (*Populus 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 Scrub-Shrub Wetlands

Approximately 5.10 acres of the study area were identified as scrub-shrub wetlands (Table 4.3-2). Wetlands G and X and portions of Wetlands D and Y are scrub-shrub wetlands (Figure 4.3-1).

Dominant vegetation in Wetlands D and G includes Pacific willow over an herbaceous layer dominated by reed canarygrass; western bittercress (*Cardamine occidentalis*) is also a dominant component of the herbaceous layer in Wetland D. Wetland Y, which is north of the closed Black Mud Pond facility (the former Reynolds Metal Company facility [Reynolds facility) per Grette Associates 2014a), includes a scrub-shrub component that is dominated by Himalayan blackberry, red osier dogwood (*Cornus sericea*), Douglas spirea (*Spiraea douglasii*), and narrowleaf cattail (*Typha angustifolia*) (Figure 4.3-3).

One scrub-shrub wetland, Wetland X, was identified in Parcel 61950, riverward of the Consolidated Improvement Diking District (CDID) #1 levee (Figure 4.3-4). This wetland is dominated by red osier dogwood, Sitka willow, and Hooker's willow (*Salix hookeriana*). Nonnative indigobush (*Amorpha fruticosa*) is also present in the shrub layer. Dominant herbs include yellow-flag iris and reed canarygrass. For further information regarding vegetation, including native and nonnative vegetation, refer to Section 4.6, *Vegetation*.

Likely wetland LW-1 on the BPA-owned land (Parcel 10213) north of Industrial Way also supports a scrub-shrub community (Grette Associates 2014b) (Figure 4.3-2). Dominant vegetation includes Hooker's willow shrubs of various heights and reed canarygrass.

All of the wetlands are supported primarily by high groundwater and direct precipitation.

4.3.4.3 Emergent (Herbaceous) Wetlands

Approximately 73.67 acres of the study area were identified as emergent wetlands (Table 4.3-2, Figure 4.3-1), the most commonly occurring type of wetland in the study area.

Wetlands E and Z are emergent wetlands; portions of Wetlands C, D, and Y as also emergent (Figures 4.3-3 and 4.3-4). Wetland E is dominated by a near monoculture of broadleaf cattail (*Typha latifolia*), with some haired bentgrass (*Agrostis scabra*) and blue wildrye (*Elymus glaucus*) along the wetland boundary. Wetland Z is dominated by reed canarygrass and soft rush (*Juncus effusus*) and contains several brush piles left over from past clearing activities. Wetland C consists of a mix of emergent and forested vegetation, with the emergent portion dominated by reed canarygrass. Wetland D includes a mix of emergent and scrub-shrub vegetation, with the emergent portion

dominated by reed canarygrass and western bittercress. Wetland Y also consists of a mix of emergent and scrub-shrub vegetation. The emergent component is dominated by reed canarygrass and an unidentified bryophyte. Some nonnative narrowleaf cattail is also present.

Herbaceous wetlands on BPA Parcel 10213 north of Industrial Way include Wetlands AS1, AS2, AS3, AS4, NW1, NW2, and NE1 (Figure 4.3-2), and the majority of the area described as "probably wetland" (Grette Associates 2014b). These areas are located throughout this parcel. All are dominated by a near monoculture of reed canarygrass that has formed a dense mat over the ground surface.

All of the wetlands are supported primarily by high groundwater and direct precipitation.

4.3.4.4 Wetland Ratings and Functions

The wetlands in the study area were rated as either Category III or Category IV wetlands, based on their generally low to moderate level of functions (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 sediments from stormwater runoff and retain stormwater and overland flows 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 of storage.

Wetlands D, E, F, and G provide high water quality functions as a result of stormwater retention due to their lack of a surface water outlet, which creates a relatively large area for seasonal ponding. Hydrologic functions were rated as moderate for all of these wetlands as a result of the amount of water they can store during wet periods within their drainage basin. Habitat functions vary between moderate and low, as all of the wetlands lack special habitat features, connectivity to habitat corridors, and intact buffers. Additionally, none of the wetlands are near or adjacent to priority habitats listed by the Washington Department of Fish and Wildlife Priority Habitats and Species (WDFW PHS) (Grette 2014c).

Wetland functions for the wetlands located on the BPA-owned parcels within the portion of the study area north of Industrial Way were determined by Grette Associates based on a reconnaissance survey. These wetlands were determined to provide low to moderate water quality functions, low to high hydrologic functions, and low to moderate habitat functions (Grette 2014c). The large emergent Wetland NE1 was rated as providing a high hydrologic function because it 1) has no outlet, which increases its ability to store surface water, 2) is relatively deep to store water, and 3) is a large wetland relative to the size of the overall basin, increasing its importance in storing water (Grette 2014c).

4.3.4.5 Ditches and Stormwater Conveyance Features or Other Waters

Ditches and stormwater conveyance features present within the study area include CDID Ditch 10, Ditch 14, 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 the construction and operation of the Proposed Action and No-Action Alternative.

4.3.5.1 Proposed Action

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

Construction activities that could directly affect wetlands include ground disturbance and placement of fill associated with construction of the coal export terminal. Operational activities that could indirectly affect wetlands include potential indirect impacts on wetland functions and values from the partial filling of wetland.

Construction—Direct Impacts

Construction of the Proposed Action would result in the following direct impacts. Construction would occur on currently developed and disturbed lands and within the Columbia River. Potential construction impacts on wetlands would include permanent fill/removal of wetlands and temporary alteration of vegetation/habitat conditions associated with construction of the coal export terminal.

Permanently Fill Wetlands and Other Waters Resulting in Loss of Acreage

Construction of the Proposed Action would extend into the undeveloped portions of the project area and would result in 24.10 acres of permanent impacts on wetlands (Table 4.3-3). Construction activities would permanently fill all of Wetlands A, C, Z, and P2 and a portion of Wetland Y (Figure 4.3-5) (Grette Associates 2014d). Loss of wetland acreage would be associated with the placement of fill material to construct rail lines and associated facilities.

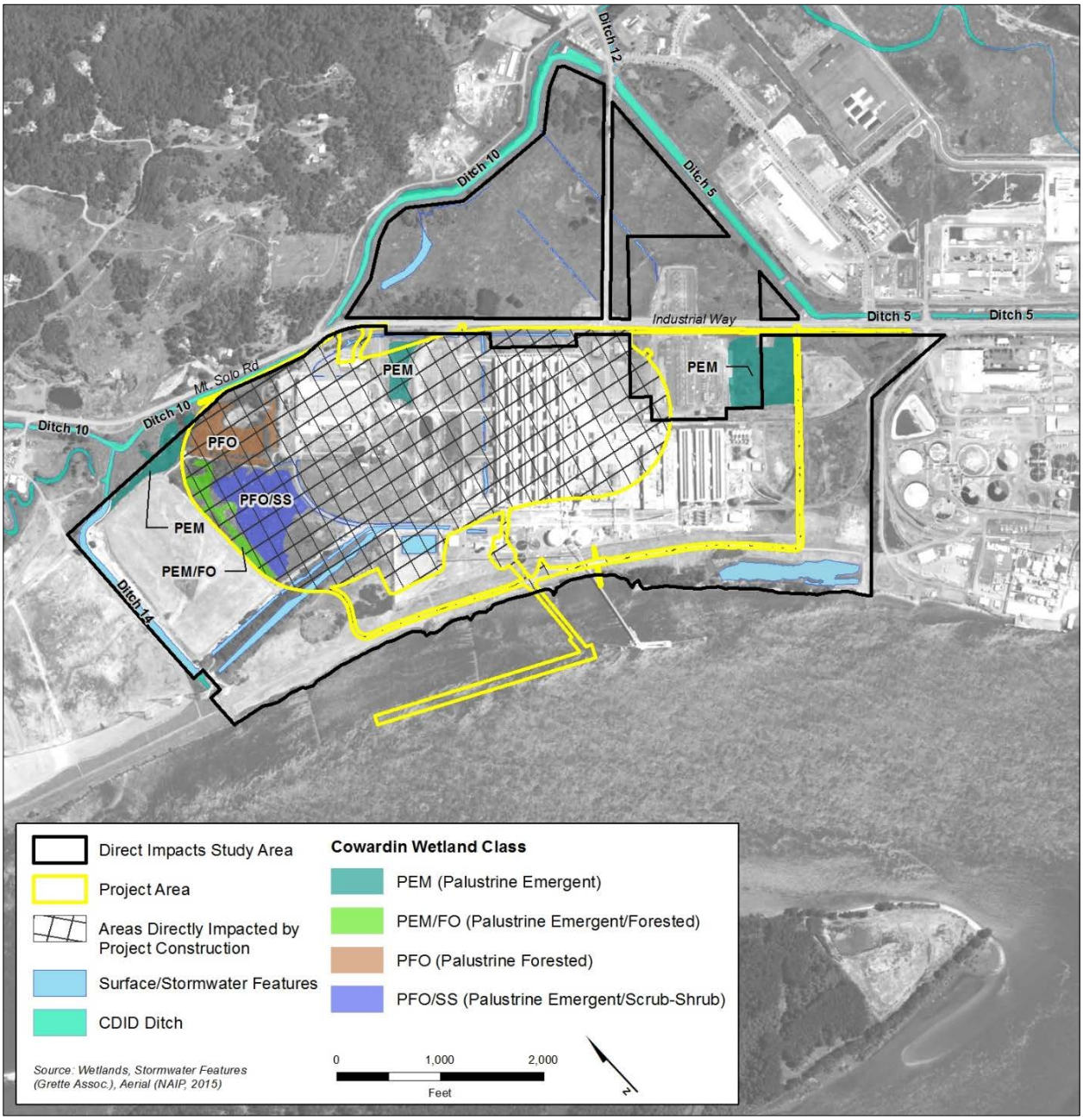
Construction of the Proposed Action would not directly affect the wetlands in the northern portion of the study area (i.e., north of Industrial Way), nor the majority of wetlands at the far eastern edge of the study area.

Table 4.3-3. 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
Z	PEM	III	Fill	11.22
Y	PEM/PSS	III	Fill	0.57
P2	PEM	III	Fill	2.65
Total				**24.10**

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

Figure 4.3-5. 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 (smaller distances for water quality functions with Category IV wetlands in low-intensity land use and larger distances for habitat functions with Category III wetlands in high-intensity land use areas). 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 to impacts on wetlands, there would also be impacts on 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, as well as interior drainage ditches (Grette Associates 2014d).

Permanent Loss of Wetland Functions

Placement of fill material in wetlands would result in the permanent loss of wetland functions across the 24.10 acres of wetlands impacted by the construction of the Proposed Action (Table 4.3-3). 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 these Category III wetlands, as evaluated using Ecology's rating system (Hruby 2006) are highest for the water quality and wildlife habitat.

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 the surrounding areas, and stormwater runoff that discharges 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 (i.e., collected and conveyed to proposed stormwater facilities; refer to Section 4.2, *Surface Water and Floodplains,* for more information). However, as this represents a minor source of hydrology compared with the ground and surface water influences from ditches, it is expected that the hydrology in the remaining portion of Wetland Y not filled by the Proposed Action would not be affected (Grette Associates 2014d).

While the wetlands in the study area do provide some wildlife habitat, this function is limited because of the existing heavy industrial land use on site and in adjacent areas (Grette Associates 2014d). Construction of the Proposed Action would permanently remove all of the wetland habitat functions for those wetlands permanently filled. The proposed fill would remove a forested portion of Wetland Y, which would reduce the wetland habitat value from moderate to low.

Construction—Indirect Impacts

As noted in Table 4.3-3, 0.57 acre of wetland in Wetland Y would be directly affected by the Proposed Action. In addition to the direct impact, indirect impacts could also occur at Wetland Y.

Indirect impacts on wetland vegetation in Wetland Y could include settling of coal dust as the movement of coal by rail could generate coal particles and fugitive coal dust, which could be deposited on vegetation. The impacts of dust on vegetation vary depending on dust load, climatic conditions, and the physical characteristics of the vegetation as reported in Section 4.6, *Vegetation*.

Indirect impacts on wildlife and hydrologic functions are expected to be minor based on the low ratings these functions received for the full wetland (Grette 2014a, 2014d). Wildlife use could be slightly reduced by the smaller size of Wetland Y and the activity associated with the coal export terminal that could disrupt wildlife use. Additionally, construction of the Proposed Action would remove Wetland A (Table 4.3-3) and Wetland Y would no longer have nearby habitat connectivity with this forested wetland. This reduced habitat connectivity would be an indirect impact.

Hydrologic functions may be slightly reduced although Wetland Y is supported primarily by groundwater and direct precipitation. Wetland Y is located in a topographically low area with high ground surrounding all sides of the wetland. Temporary fluctuations in groundwater could occur during construction activities if any trenching activities take place near Wetland Y. Dewatering effluent would be pumped to temporary containment tanks for settling, where it would be tested for pollutants before being discharged to receiving waters. Wetland Y's hydrology is not expected to vary during operations from existing conditions. As noted in Section 4.4, *Groundwater*, a nominal amount of groundwater recharge for the deeper aquifer occurs under existing conditions and would likely be similar during operations. Operations would not be expected to measurably affect groundwater recharge for the deeper aquifer. Groundwater flow is expected to be similar to existing conditions, but may be increase at greater depths and/or slow near the surface. Indirect impacts on water quality are not likely to occur as runoff from the site would be directed to on-site drainage systems and would be treated and reused on site, or discharged in accordance with the new National Pollutant Discharge Elimination System Industrial Stormwater Permit that would be required for the operation of the Proposed Action. Additionally, as reported in Section 4.4, *Groundwater*, operation of the Proposed Action would have a negligible impact on groundwater supply, which would likely have a negligible effect on groundwater associated with Wetland Y.

Operations—Direct Impacts

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

Operations—Indirect Impacts

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

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 (i.e., would not affect waters of the United States). Thus, potential impacts on wetlands from the No-Action Alternative are expected to

be negligible. 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 and the agency issuing the permit associated with 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. Because impacts would exceed 0.5 acre, Individual Authorization from the Corps under Section 404 of the Clean Water Act and appropriate compensatory mitigation for the acres and functions of the affected wetlands 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 construction of the Proposed Action.
- **Critical Areas Permit—Cowlitz County Department of Building and Planning.** The Proposed Action would result in development in designated critical areas because the project area contains wetlands, a frequently flooded area, an erosion hazard area, and a critical aquifer recharge area. Therefore, it would require 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 the State Shoreline Management Act, the Cowlitz County Shoreline Master Program, and the City of Longview Shoreline Master Program.

4.3.7 Potential Mitigation Measures

This section describes the 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 wetlands affected by placement of fill

from the Proposed Action. The mitigation will address impacts on 24.10 acres of wetlands to be permanently filled (Grette Associates 2014d).

Once developed, the mitigation plan will be subject to public review and comment. The mitigation plan will address the general requirements for mitigation planning consistent with all current local, state and federal guidance and regulations.

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 the highest required compensatory mitigation ratios as stipulated by the Corps, Ecology, or Cowlitz County.

Historical habitat types in the study area vicinity will be used as templates for designing permittee-responsible mitigation actions. This will include careful consideration of the influence of physical processes on habitat succession and function. CCC 19.15.170 E(5) and the 2006 interagency guidance identify mitigation ratios that prescribe the acreage increases needed to compensate for unavoidable impacts on wetlands, depending on the type of mitigation and category of the affected wetland. 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 will look at impacts and mitigation on a case-by-case basis.

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

- Wetland mitigation bank credits.
- Off-site permittee-responsible 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 impacts on wetlands. There would be no unavoidable and significant adverse environmental impacts.