

5.3 Wetlands

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, as defined by the Corps' wetland delineation manual (Environmental Laboratory 1987) 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." 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 On-Site Alternative and Off-Site Alternative study areas. It then describes impacts on wetlands that could result from construction and operation of the proposed export terminal.

Impacts on ditches and stormwater conveyance features or *other waters* are also presented as described in the Grette Associates documents referenced in Section 5.3.3.1, *Information Sources*. No determination of federal jurisdiction over these types of features is implied by their inclusion herein. The affected environment and impacts within the Columbia River are assessed in Section 5.2, *Surface Water and Floodplains*.

5.3.1 Regulatory Setting

Laws and regulations relevant to wetlands are summarized in Table 5.3-1. 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 5.3-1. 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 5.3-1. 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 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 (CCC 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 (CCC 19.20)	Regulates development in the shoreline zone, including the shoreline of the Columbia River, a Shoreline of Statewide Significance.
City of Longview Shoreline Master Program (Off-Site Alternative only)	The City's SMP consists of environmental designations for the shoreline segments and goals, policies, and regulations applicable to uses and modifications within the Shoreline Management Zone.
City of Longview Critical Areas Ordinance (LMC 17.10.140) (Off-Site Alternative only)	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.
Notes: USC = United States Code; NPDES = National Pollutant Discharge Elimination System; RCW = Revised Code of Washington; WAC = Washington Administrative Code; WDFW = Washington Department of Fish and Wildlife; CCC = Cowlitz County Code; SMP = Shoreline Management Program; LMC = Longview Municipal Code	

5.3.2 Study Area

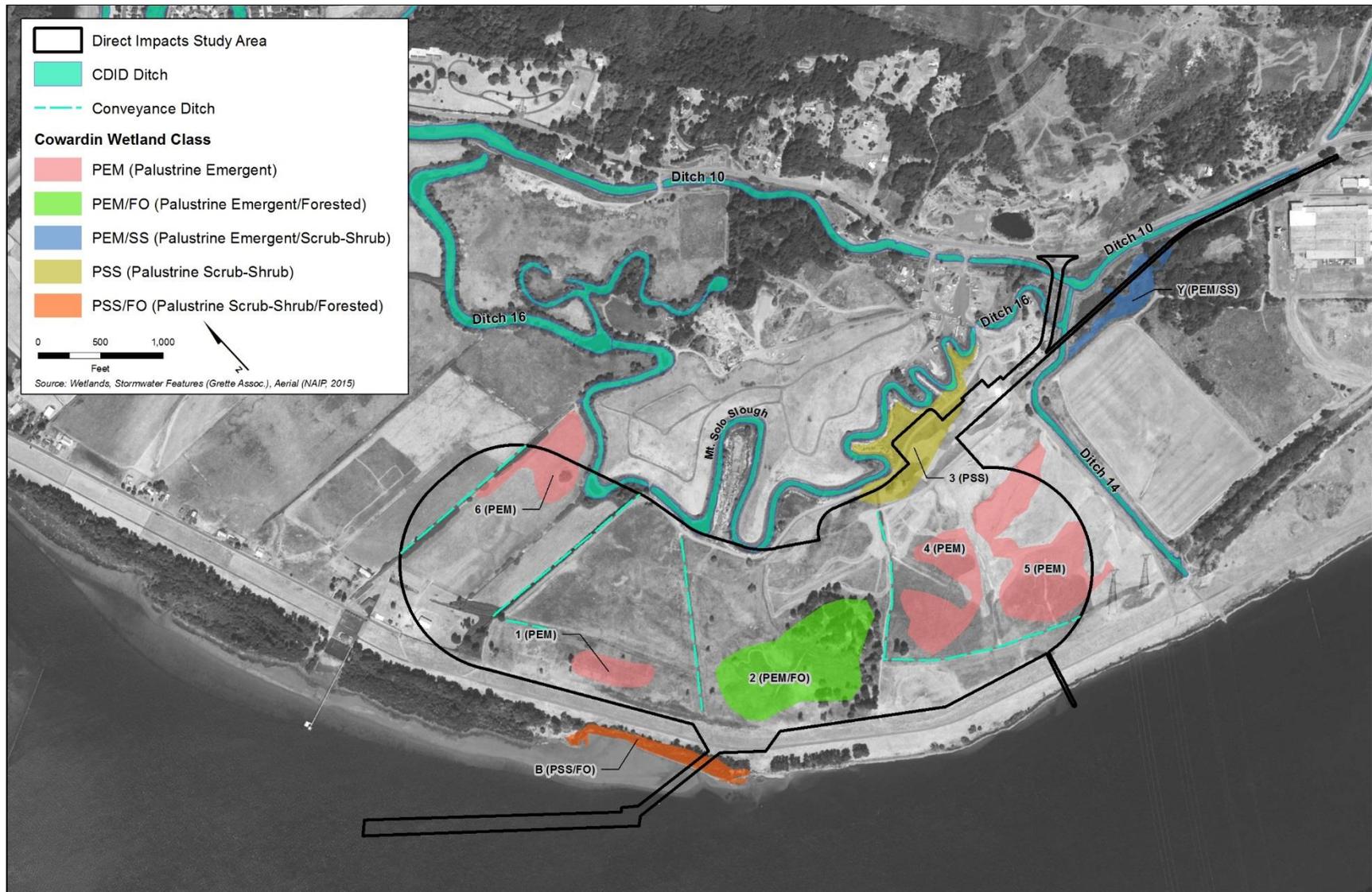
The On-Site Alternative study area for direct impacts on wetlands is the project area (Figure 5.3-1). The study area for indirect impacts is the project area and the immediate vicinity, where wetlands might be affected by construction or operation of the proposed export terminal.

The Off-Site Alternative study area for direct impacts on wetlands is the project area (Figure 5.3-2). 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.

Figure 5.3-1. Wetlands in the Study Area—On-Site Alternative



Figure 5.3-2. Wetlands in the Study Area—Off-Site Alternative



5.3.3 Methods

This section describes the sources of information and methods used to evaluate the potential impacts on wetlands associated with construction and operation of the proposed export terminal.

5.3.3.1 Information Sources

The following sources of information were used to identify the potential impacts of the On-Site Alternative, Off-Site Alternative, 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 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)
 - *Off-Site Alternative–Barlow Point Shoreline Habitat Inventory* (Grette Associates 2014e)
 - *Off-Site Alternative–Barlow Point Wetland Reconnaissance Report* (Grette Associates 2014f)
 - *Off-Site Alternative–Barlow Point Wetland Impact Report* (Grette Associates 2014dg)

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.

Information regarding the affected environment relative to ditches and stormwater conveyance features or other waters is presented in Section 5.2, *Surface Water and Floodplains*.

5.3.3.2 Impact Analysis

The following methods were used to evaluate the potential impacts of the proposed export terminal on wetlands. For direct impacts, the analysis assumes best management practices were incorporated into the design, construction, and operations of the export terminal. More information about best management practices and mitigation measures, including compensatory mitigation for direct wetland impacts can be found in Chapter 8, *Minimization and Mitigation*, and Appendix H, *Export Terminal Design Features*.

All quantitative and qualitative impacts on wetlands are summarized as described in the Grette Associates documents referenced in Section 5.3.3.1, *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 they would be replaced with gravel pads, stockpiles, railroad tracks, buildings, pavement, and other project features. Direct wetland impacts would be mitigated at current federal, state and local mitigation ratios. Refer to Chapter 8, *Minimization and Mitigation* for more information.

5.3.4 Affected Environment

To identify areas that meet the definition of wetlands, per the Corps wetland delineation manual (Environmental Laboratory 1987), scientists look for specific field characteristics of soil, hydrology, 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.

5.3.4.1 On-Site Alternative

There are 26.93 acres of wetlands in the study area. The distribution of wetlands in the study area is shown in Figure 5.3-1. Table 5.3-2 summarizes the wetlands by 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, Category IV wetlands have the lowest level of function. All wetlands in the study area are considered depressional from a hydrogeomorphic classification perspective.

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 (nonwoody plants, such as grasses, sedges, rushes, and herbaceous flowering plants). Individual wetlands can consist of more than one vegetation type. Wetlands in the study areas are organized by Cowardin vegetation classification.

Table 5.3-2. Wetlands Identified in the Study Area—On-Site Alternative

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.

Forested Wetlands

Approximately 6.28 acres of forested wetland occur in the study area as Wetland A (Figure 5.3-1). This wetland is depressional and supported primarily by high groundwater and direct precipitation. 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.

Emergent/Forested Wetlands

Approximately 3.38 acres of emergent/forested wetland occur in the study area as Wetland C (Figure 5.3-1). 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.

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 (BMP) facility, and is the only wetland in the direct impacts study area that extends outside of the direct impacts study area (Figure 5.3-1). 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.

Emergent (Herbaceous) Wetlands

Approximately 13.87 acres of emergent wetland occur in the study area as Wetlands Z and P2 (Figure 5.3-1). 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.

Wetland Ratings and Functions

The wetlands in the study area were rated as 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.

Ditches and Stormwater Conveyance Features or Other Waters

Ditches and stormwater conveyance features present in the study area include the Interceptor Ditch/U Ditch and several narrow stormwater ditches crossing through the study area (Figure 5.3-1). These features, as well as the Columbia River, are described for the On-Site Alternative in Section 5.2, *Surface Water and Floodplains*.

5.3.4.2 Off-Site Alternative

Approximately 64.76 acres of wetland were identified in the Off-Site Alternative study area. The distribution of wetlands in the study area is shown in Figure 5.3-2. All wetlands except Wetland B are located behind (landward of) the levee. Because access to the Off-Site Alternative location was not granted by the landowner, wetland areas were determined using aerial photographs, light detection and ranging (LiDAR)-based digital elevation data, the *Corps of Engineers Wetlands Delineation Manual*, and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (Grette 2014f). Wetland boundaries were estimated based on changes in vegetation, topography, visible hydrology, historical land use activities, and best professional judgement (Grette 2014f). Table 5.3-3 summarizes wetlands by location, Cowardin vegetation classification, hydrogeomorphic classification, regulatory category, and acreage.

Forested/Emergent Wetland

Approximately 17 acres of forested/emergent wetland occur in the study area (Table 5.3-3), as Wetland 2. Dominant vegetation includes black cottonwood, Oregon ash, and red alder underlain by a shrub layer composed of saplings of these species as well as various willows. The emergent layer consists of reed canarygrass.

Table 5.3-3. Wetlands Identified in the Study Area—Off-Site Alternative

Wetland	Location (Parcel)	Cowardin Classification ^a	HGM Classification ^b	Category ^c	Area (acres)
1	107150100	PEM	Depressional	III	3.00
2	107150100, 10716011	PFO/PEM	Depressional	III	17.00
3	106990100, 107170100	PSS	Depressional	III	9.00
4	107170100	PEM	Depressional	III	8.00
5	107170100, 107180100	PEM	Depressional	III	15.00
6	107840100	PEM	Depressional	III	6.00
B	107140100, 107190100	PFO/PSS	Riverine	III ^d	3.36
Y	106980100, 106970100	PEM/PSS	Depressional	III	3.4
Total					64.76

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; PEM = palustrine emergent.

^b Hydrogeomorphic (HGM) classification per Hraby 2006.

^c Wetland Type determined by Grette per Hraby 2006.

^d Wetland B was not rated by Grette. Ratings shown were determined by ICF based on wetland descriptions provided in Off-Site Alternative—Barlow Point Shoreline Habitat Inventory (Grette Associates 2014h).

Source: Grette Associates 2014e:20–30, 2014f:13–16

Scrub-Shrub Wetland

Approximately 9 acres of the project area are scrub-shrub wetlands (Table 5.3-3) that comprise Wetland 3. Dominant vegetation includes young black cottonwood, red alder, and Oregon ash, as well as red osier dogwood, Nootka rose (*Rosa nutkana*), willows, and Himalayan blackberry. Approximately 4.98 acres of this wetland was recently disturbed by vegetation clearing. Remnant vegetation includes black cottonwood, red alder, Pacific willow, Himalayan blackberry, and soft rush.

Emergent (Herbaceous) Wetlands

Approximately 32 acres of the project area are emergent wetlands (Table 5.3-3), consisting of Wetlands 1, 4, 5, and 6. These wetlands are dominated by reed canarygrass. Approximately 6.76 acres of Wetlands 4 and 5 appear to be mowed regularly.

Forested/Scrub-Shrub Wetland

Approximately 3.36 acres of the project area are forested/scrub wetlands (Table 5.3-3), that comprise Wetland B. Wetland B is a riparian wetland along the Columbia River on the riverward side of the levee. This wetland is dominated by black cottonwood, Oregon ash, red osier dogwood, Pacific willow, nootka rose, Columbia River willow, reed canarygrass, creeping buttercup (*Ranunculus repens*), and slough sedge.

Emergent/Scrub-Shrub Wetland

Approximately 3.4 acres of the project area are emergent/scrub-shrub wetlands (Table 5.3-3), that comprise Wetland Y. This wetland is dominated by reed canarygrass, Himalayan blackberry, red osier dogwood, rose spiraea, and narrowleaf cattail.

Wetland Ratings and Functions

All wetlands in this study are rated Category III based on their low to moderate level of function for hydrology, water quality, and habitat (Grette 2014f).

Wetlands 1, 2, 3, 4, 5, 6, and Y are depressional wetlands providing low hydrology functions and moderate water quality functions (except Wetland 6, which provides low water quality function). All of these wetlands provide low to moderate habitat functions. These depressional wetlands collect surface water runoff that provides some stormwater retention and sediment filtering. In addition, the wetlands provide some pollutant filtration and groundwater infiltration functions. However, during large rain events the relatively shallow depressions have limited potential to store stormwater. Habitat functions are moderate for Wetlands 2, 3, 5, and Y. They provide large and small mammal foraging and cover; passerine, waterfowl, and raptor foraging and nesting; and amphibian foraging, breeding, and nesting. WDFW PHS data indicate Columbia white-tailed deer occur in Wetland 2 (Grette 2014f). Wetlands 1, 4, and 6 provide low habitat functions due to surrounding agricultural and industrial land uses; wildlife functions in these wetlands areas are limited to temporary use by passerine birds and waterfowl for foraging, breeding, and refuge.

Wetland B is a riverine wetland that provides moderate to high water quality functions, moderate hydrology functions, and low habitat functions. The water quality function rating is based on the wetland's forest and scrub-shrub plant cover and potential to filter pollutants. The moderate hydrology function of the wetland is based on forest and scrub-shrub cover capable of retaining flood waters, absence of downcutting adjacent to the wetland, and presence of potential surface flooding problems downstream of the wetland. Habitat functions are low due to low plant community structures, interspersed habitat, plant richness, hydroperiods, and special habitat features. The surrounding habitat areas are also disturbed or disconnected from the wetland. However, the wetland did score a higher rating by providing habitat for special status species and being adjacent to some priority habitats.

Ditches and Stormwater Conveyance Features or Other Waters

Ditches and stormwater conveyance features in the study area include Ditches 10 and 14 and the Mount Solo Slough. These features, as well as the Columbia River, are described for the Off-Site Alternative in Section 5.2, *Surface Water and Floodplains*.

5.3.5 Impacts

The following impacts on wetlands could result from construction and operation of the proposed export terminal.

5.3.5.1 On-Site Alternative

The following sections describe the potential impacts on wetlands from construction and operation of the proposed export terminal at the On-Site Alternative location.

Construction—Direct Impacts

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

Wetland Acreage

Construction would result in the permanent loss of 24.10 acres of wetlands (Table 5.3-4). Construction activities would permanently fill Wetlands A, C, Z, and P2 and a portion of Wetland Y (Figure 5.3-3) (Grette Associates 2014d) to construct rail lines and coal-handling facilities. Construction of the terminal would not directly affect wetlands north of Industrial Way or the majority of wetlands at the east end of the study area.

Table 5.3-4. Wetland Impacts—On-Site Alternative

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	IV	Fill	2.65
Total				24.10

Notes:

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

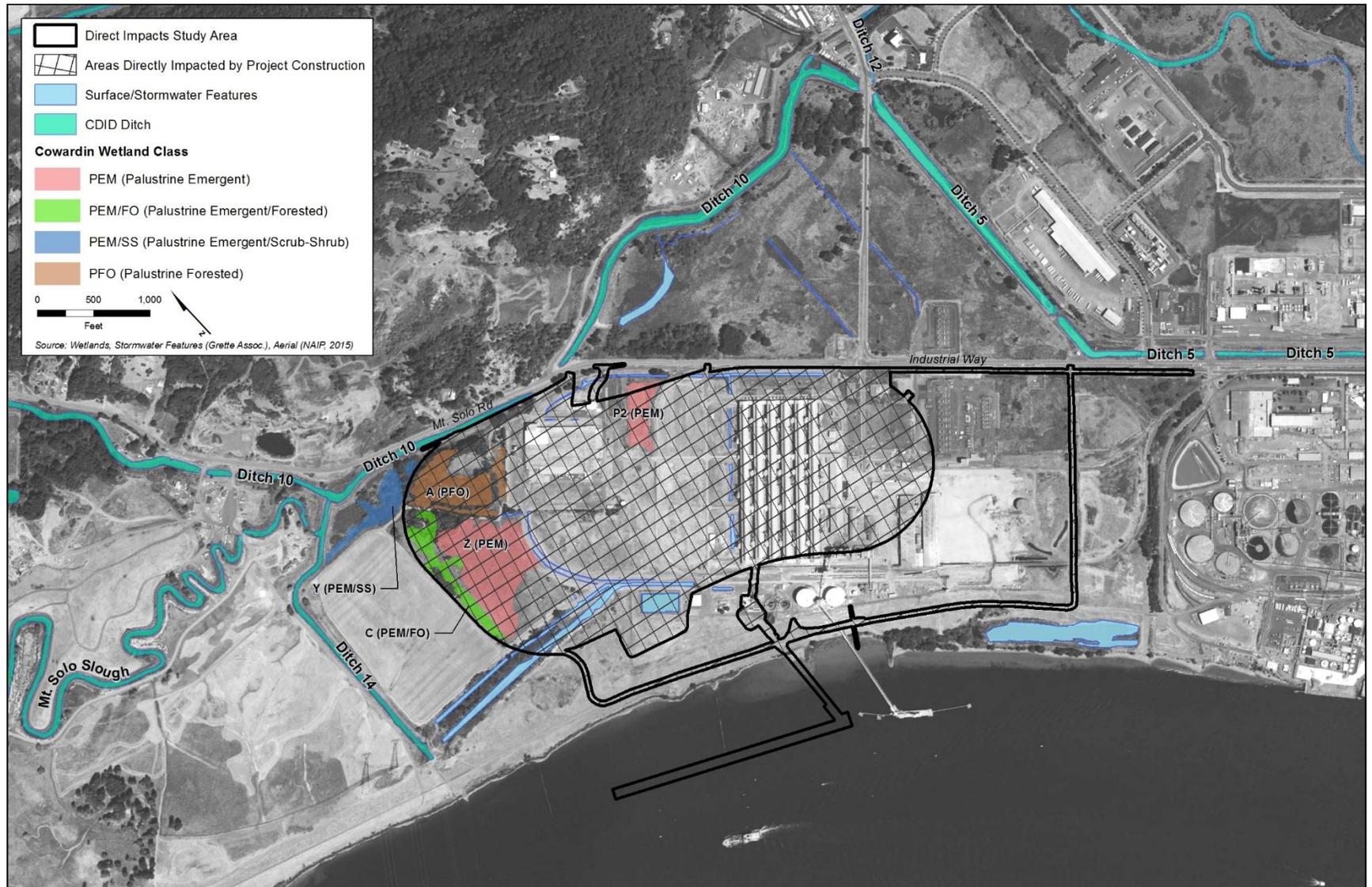
In addition, construction would permanently fill 5.17 acres of ditches conveying stormwater runoff (Grette Associates 2014d), including the eastern half of the Interceptor/U Ditch, portions of the ditch along the south edge of Industrial Way on the BPA parcel, and interior drainage ditches (Grette Associates 2014d). Refer to Section 5.2, *Surface Water and Floodplains*, for more information on ditches and other surface waters.

Wetland Functions

Placement of dredged or fill material to construct the terminal would result in the permanent total loss of wetland functions across 24.10 acres of wetlands (Table 5.3-4). 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 terminal 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 currently discharging into Wetland Y through outfall 005 would be rerouted to proposed stormwater facilities (see Section 5.2, *Surface Water and Floodplains*). However, since this is a minor source of hydrology compared with surface water and groundwater from ditches, hydrology in the unfilled portion of Wetland Y likely would not be affected (Grette Associates 2014d).

Figure 5.3-3. Wetlands Affected by the On-Site Alternative



While wetlands in the study area do provide some wildlife habitat, this function is limited due to prior heavy industrial land use at the On-Site Alternative location and adjacent areas (Grette Associates 2014d). Construction of the terminal would permanently 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. See Chapter 8 *Minimization and Mitigation*, for specific wetland mitigation that would offset wetland impacts.

Construction—Indirect Impacts

Construction of the proposed export terminal at the On-Site Alternative location would permanently fill 0.57 acre of Wetland Y, leaving 2.83 acres of Wetland Y unfilled and intact. The primary indirect impact would be the degradation or alteration of wetland functions in this wetland. While other indirect impacts, such as sedimentation from stormwater runoff and accidental 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.

Wetlands north of Industrial Way, which are in the vicinity of the project area, are 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, the ordinance does not require wetland buffers to extend beyond existing natural or human-made barriers (e.g., a paved road). Industrial Way is a human-made barrier for off-site wetlands north of Industrial Way. Therefore, construction of the terminal at the On-Site Alternative location would not impact those wetland buffers (Grette Associates 2014d).

Wetland Functions

Construction could result in the alteration or degradation of 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 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. Indirect impacts on water quality functions are unlikely because it would be protected by a Stormwater Pollution Prevention Plan (SWPPP) and NPDES Construction Stormwater General Permit.

Operations—Direct Impacts

Operation of the proposed export terminal at the On-Site Alternative location would have no direct impacts on wetlands.

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 or increase 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). Such impacts can be complex, and neither the impact mechanism nor a threshold for any potential physical or biological impacts of coal dust deposition have been studied relative to the climate and native vegetation of the Pacific Northwest. The *NEPA Vegetation Technical Report* summarizes studies of the impacts of dust deposition on vegetation in other regions. Coal dust deposition is discussed further in Chapter 6, Sections 6.6, *Air Quality*, and 6.7, *Coal Dust*.

5.3.5.2 Off-Site Alternative

The following sections describe the potential impacts on wetlands from construction and operation of the terminal at the Off-Site Alternative location.

Construction—Direct Impacts

Wetland impacts associated with construction of the proposed export terminal at the Off-Site Alternative location would include permanent fill and conversion to upland, and temporary alteration of vegetation and habitat conditions as described below.

Acreage Loss

The Off-Site Alternative would permanently fill 51.28 acres of wetlands (Table 5.3-5)—all of Wetlands 1, 2, and 4 and portions of Wetlands 3, 5, 6, and Y (Figure 5.3-4)—to construct rail lines and associated terminal facilities. The Off-Site Alternative trestle would extend across 140 feet of Wetland B and involve permanently removing about 0.08 acre of trees.

Table 5.3-5. Wetland Impacts—Off-Site Alternative

Wetland/Other Waters	Cowardin Classification	Category	Impact Type	Impact Area
1	PEM	III	Fill	3.0
2	PFO/PEM	III	Fill	17.0
3	PSS	III	Fill	3.0
4	PEM	III	Fill	8.0
5	PEM	III	Fill	15.0
6	PEM	III	Fill	4.0
B	PFO/PSS	III	Vegetation Clearing/ Trimming	0.08
Y	PEM/PSS	III	Fill	1.2
Total				51.28

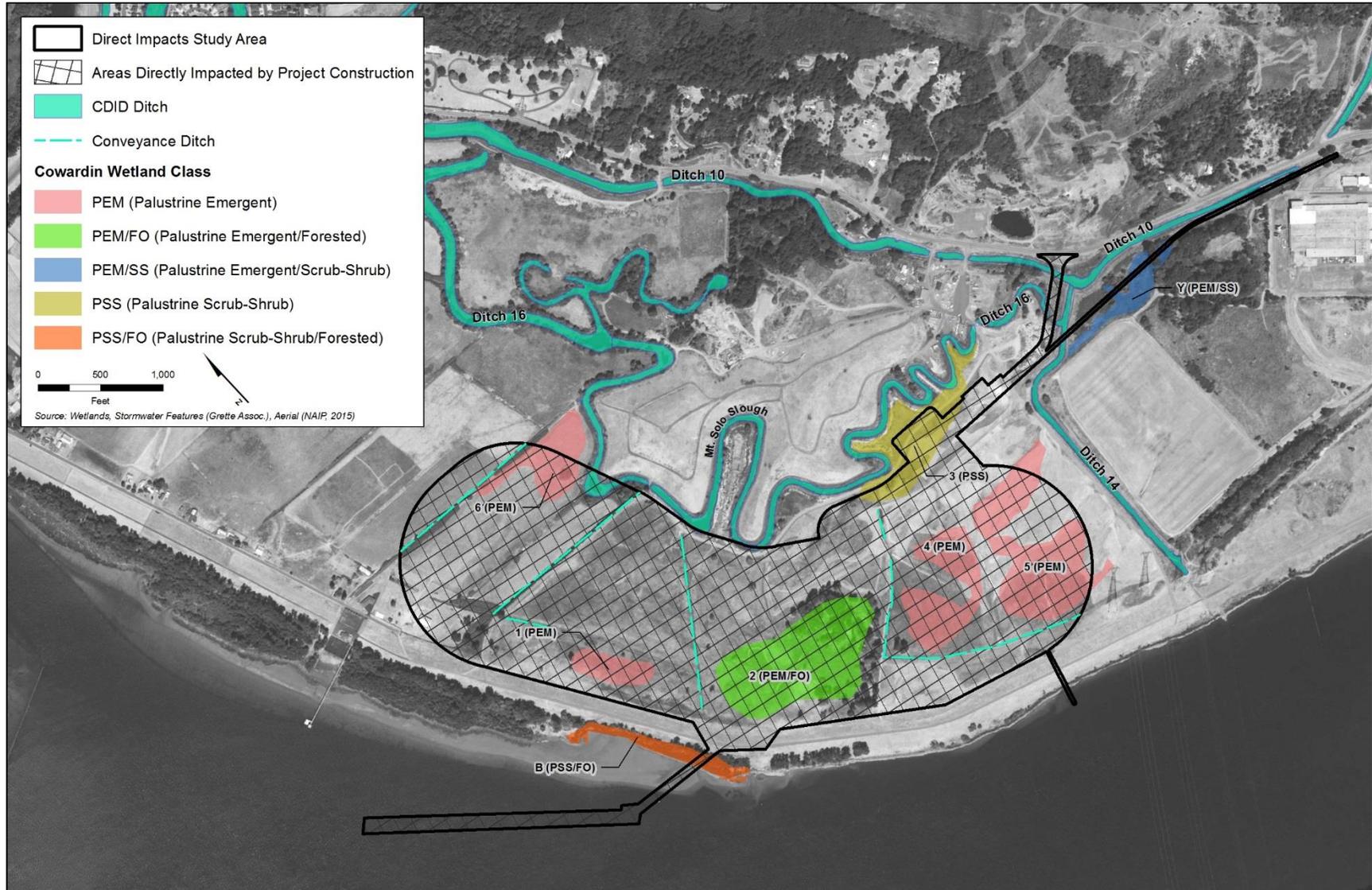
Notes:

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

Source: Grette 2014e: 20–30, 2014g: 10

The City of Longview’s Critical Areas Ordinance (Longview Municipal Code [LMC] 17.10.110) requires 80-foot buffers around the Category III wetlands identified in the study area. Buffers adjacent to the filled portions of Wetlands 3, 5, 6, and Y would be removed.

Figure 5.3-4. Wetlands Affected by the Off-Site Alternative



In addition to impacts on wetlands, construction would permanently fill 5.0 acres of ditches conveying stormwater runoff (Grette Associates 2014g:10), including portions of CDID Ditches 10 and 14 and Mount Solo Slough. Refer to Section 5.2, *Surface Water and Floodplains*, for further information on ditches and other surface waters.

Wetland Functions

Construction would result in the permanent loss of wetland functions over 51.28 acres of wetlands (Table 5.3-5) and degrade the functions of the remaining portions of partially filled wetlands. The functions most affected would be water quality and wildlife habitat.

Construction would permanently destroy all water quality and hydrology functions in Wetlands 1, 2, and 4. Stormwater runoff currently discharging into these wetlands would be redirected into an on-site stormwater treatment facility. Wetlands 3, 5, 6, and Y would be partially filled but continue to provide reduced stormwater retention and storage, pollution filtration, and groundwater infiltration/recharge functions.

While wetlands that would be filled currently provide some wildlife habitat, this function would be limited because of industrial land use on adjacent areas (Grette Associates 2014g:1-19). Completely filling Wetlands 1, 2, and 4 would permanently remove all habitat functions these wetlands currently provide. Based on WDFW PHS data, Columbia white-tailed deer occur in Wetland 2. Wetlands 3, 5, 6, and Y would continue to provide limited habitat functions.

Wetland B would not be filled, but clearing and trimming 0.08 acre of wetland vegetation to facilitate construction of the trestle would likely degrade water quality and hydrology functions if vegetation is cleared down to ground level. This would reduce the wetland's capacity to slow flood flows and retain water and pollution, although the effect of this small area of impact would be minimal.

Clearing or trimming vegetation would also fragment habitat and reduce functionality. However, the wetland is already separated from other wetlands by the levee; it is located between the Columbia River and a mowed/maintained levee and road.

Construction—Indirect Impacts

As stated previously, the portions of Wetlands 3, 6, and Y extending beyond the boundaries of the project area would remain intact (6, 2, and 2.2 acres, respectively). While Wetland B would not be filled (it would be slightly cleared), there could be indirect impacts such as sedimentation during stormwater runoff and accidental fuel spills. The remaining portions of Wetlands 3, 5, 6, and Y would be exposed to similar potential indirect impacts. Implementing best management practices (e.g., silt fencing) required by federal, state, and local permits would minimize indirect impacts.

Wetland Functions

Wetland Y would be partially filled under the Off-Site Alternative (Table 5.3-5, Figure 5.3-4), and indirect impacts under the Off-Site Site Alternative would be similar to the On-Site Alternative. Wetlands 3 and 5 are similar to Wetland Y in functional ratings for water quality (moderate), hydrology (low), and habitat (moderate), and indirect construction impacts are expected to be similar for all three wetlands. Wetland 6 is in the same hydrogeomorphic class as Wetland Y but

scores low on all three functions. Indirect impacts on Wetland 6 would be similar to Wetland Y but impacts would affect lower-rated water quality and habitat functions.

Operations—Direct Impacts

Operation of the proposed export terminal at the Off-Site Alternative location would have no direct impacts on wetlands.

Operations—Indirect Impacts

Indirect impacts on Wetlands 3, 5, 6, and Y related to contaminants from stormwater runoff and coal dust deposition would be similar to those described for the On-Site Alternative. Stormwater runoff would be collected for on-site treatment and would no longer discharge into wetlands. Water would be reused or discharged into the Columbia River in accordance with the NPDES Industrial Stormwater Permit. The impacts of coal dust on vegetation would depend on dust load, climatic conditions, and the physical characteristics of the vegetation, as reported in Section 5.6, *Vegetation*.

5.3.5.3 No-Action Alternative

Under the No-Action Alternative, the Corps would not issue a Department of the Army permit authorizing construction and operation of the proposed export terminal. As a result, impacts resulting from constructing and operating the export terminal would not occur. In addition, not constructing the export terminal would likely lead to expansion of the adjacent bulk product business onto the export terminal project area. The following discussion assesses the likely consequences of the No-Action Alternative related to wetlands.

Under the No-Action Alternative, ongoing operations in the On-Site Alternative project area would continue. Additional storage and transfer activities might occur using existing buildings and structures. The Applicant would continue with current and future increased operations and the project area could be developed for other industrial uses including an expanded bulk product terminal or other industrial uses. New construction, demolition, or related activities to develop the project area into an expanded bulk terminal could occur on previously developed and undeveloped lands. Thus, potential impacts on wetlands could occur under the No-Action Alternative similar to those described for the On-Site Alternative, but the magnitude of the impacts would depend on the nature and extent of proposed future expansion.

5.3.5.4 Required Permits

Permits required for the proposed export terminal would likely include the following.

- **Clean Water Act Authorization, Section 404—U.S. Army Corps of Engineers.** Construction and operation of the terminal 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 terminal.

- **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.
- **Critical Areas Permit—City of Longview Community Development, Department Planning Division (Off-Site Alternative Only).** Development in designated critical areas, including wetlands, requires a Critical Areas Permit from the City of Longview Community Development, Department of Planning Division.

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