

3.6 VEGETATION AND TERRESTRIAL WILDLIFE



Natural vegetation provides habitat for wildlife, aesthetic amenities for people, and soil stabilization. Vegetation may also hold cultural value and helps provide a buffer between competing land uses. Wildlife species rely on vegetation and habitat resources for survival and to assist in migration. They also bring commercial, recreational, and tribal assets to the community by providing resources for hunters and fishermen as well as birders or nature enthusiasts. Padilla Bay is an important wildlife habitat resource for the Pacific Flyway and it supports an enormous variety of migratory wildlife.

STUDY AREA AND METHODOLOGY

The study area used to conduct an analysis of potential impacts to vegetation and terrestrial wildlife was defined to include:

- The proposed project site and lands within 1,045 feet (Figure 3.6-1). This area was used in the biological evaluation prepared for the proposed project and accounts for the greatest distance that atmospheric noise anticipated to be produced by construction and operation of the proposed project could affect terrestrial species (AECOM 2016a).
- The proposed wetland mitigation site and lands within 1,045 feet (Figure 3.6-2) to account for the greatest distance that atmospheric noise anticipated to be produced by construction of the mitigation site could affect terrestrial species.
- The Anacortes Subdivision and lands within 0.25 mile of the rail line (Figure 3.6-3 and 3.6-4). This area accounts for the limits of potential noise impacts resulting from operation of the proposed project compared with existing conditions (see Chapter 3.9 – Noise and Vibration).

Select laws, regulations, and guidance applicable to vegetation and terrestrial wildlife associated with the proposed project are summarized in Table 3.6-1.

Because the potential impacts associated with vegetation and terrestrial wildlife are localized, the cumulative impacts study area would be the same as that described above for direct and indirect impacts.

Table 3.6-1 Laws, Regulations, and Guidance for Project-Related Vegetation and Terrestrial Wildlife

Laws, Regulations, and Guidance	Description
Federal	
Clean Water Act (33 USC 1251 et seq.)	<p>Establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulates quality standards for surface water.</p> <p>Section 401 (33 USC 1251) Water Quality Certifications are required for any activity that requires a federal permit or license to discharge any pollutant into waters of the United States. This certification attests that the responsible agency has reasonable assurance the proposed activity will meet its water quality standards.</p> <p>Section 404 (33 USC 1344) established a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands.</p>
Endangered Species Act (ESA) (16 USC 1531 et seq.)	<p>Requires that applicants seeking a federal action undergo consultation with U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Services (NMFS). This ensures the federal action is not likely to jeopardize the continued existence of any listed threatened or endangered animal species or result in the destruction or adverse modification of designated critical habitat. The USFWS and the NMFS share responsibility for implementing the ESA. The USFWS is responsible for terrestrial and freshwater species. The NMFS is responsible for marine species. Both NMFS and USFWS are responsible for designating critical habitat for ESA-listed species.</p>
Migratory Bird Treaty Act of 1918, as amended (16 USC 703–713)	<p>Makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations. The USFWS has statutory authority and responsibility for enforcing the Migratory Bird Treaty Act (MBTA). The MBTA implements conventions between the United States and four countries (Canada, Mexico, Japan, and Russia) for the protection of migratory birds.</p>



Laws, Regulations, and Guidance	Description
Bald and Golden Eagle Protection Act of 1940, as amended (16 USC 668–668c)	Prohibits anyone without a permit issued by the Secretary of the Interior from “taking” bald eagles, including their parts, nests, or eggs. The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle’s return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.
State	
State Environmental Policy Act (SEPA) (RCW 43.21c; WAC 197-11)	Helps state and local agencies in Washington identify possible environmental impacts that could result from a proposed action, alternatives to the proposed action and potential impact minimization and mitigation measures. Information learned through the review process can be used to change a proposal to reduce likely impacts and inform permitting decisions at the state and local levels.
Washington State Growth Management Act (RCW 36.70A)	Requires state and local governments to manage Washington’s growth by identifying and protecting critical areas and natural resource lands, designating urban growth areas, and preparing comprehensive plans and implementing them through capital investments and development regulations.
Washington State Shoreline Management Act (RCW 90.58)	Provides a statewide framework for managing, accessing, and protecting shorelines of the state and reflects the strong interest of the public in shorelines and waterways for recreation, protection of natural areas, aesthetics, and commerce.
Washington Natural Area Preserves Act, amended 1981 (RCW 79.70)	Established the Washington Natural Heritage Program within the Washington State Department of Natural Resources to identify which species and ecosystems are priorities for conservation effort, build and maintain a database for priority species and ecosystems, and share the information with others so that it can be used for environmental assessments and conservation planning.



Laws, Regulations, and Guidance	Description
Washington State Noxious Weed Control Boards and State Noxious Weed List (RCW 17.10, WAC 16-750)	To limit economic loss and adverse effects to Washington's agricultural, natural, and human resources due to the presence and spread of noxious weeds on all terrestrial and aquatic areas in the state, the Noxious Weed Control Board advises the Washington State Department of Agriculture (WSDA) about noxious weed control in Washington State. Through its actions and policy decisions, the Board helps coordinate and supports the activities of the 48 county noxious weed control boards and weed districts of Washington. The Board also works with neighboring states and British Columbia, and provides leadership on regional or statewide noxious weed projects. The Board maintains the state's official list of noxious weeds that landowners may be required to control.
Washington State Hydraulic Code (WAC 220-660)	A hydraulic project is the construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters of the state. Unless otherwise provided, any person who wishes to conduct a hydraulic project must get a construction permit called the hydraulic project approval (HPA) from the Washington Department of Fish and Wildlife (WDFW). The purpose of the HPA is to ensure that construction or performance of work is done in a manner that protects fish life.
Washington State Forest Practices Rules (WAC 222)	Establishes standards for forest practices such as timber harvest, pre-commercial thinning, road construction, fertilization, and forest chemical application. The rules are designed to protect public resources such as water quality and fish habitat while maintaining a viable timber industry.
Local	
Skagit County Critical Areas Ordinance (SCC 14.24)	This ordinance was developed under the directives of the Growth Management Act to designate and protect critical areas and to assist in conserving the value of property, safeguarding the public welfare and providing protection for these areas. Critical areas are defined as wetlands, aquifer recharge areas, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas.



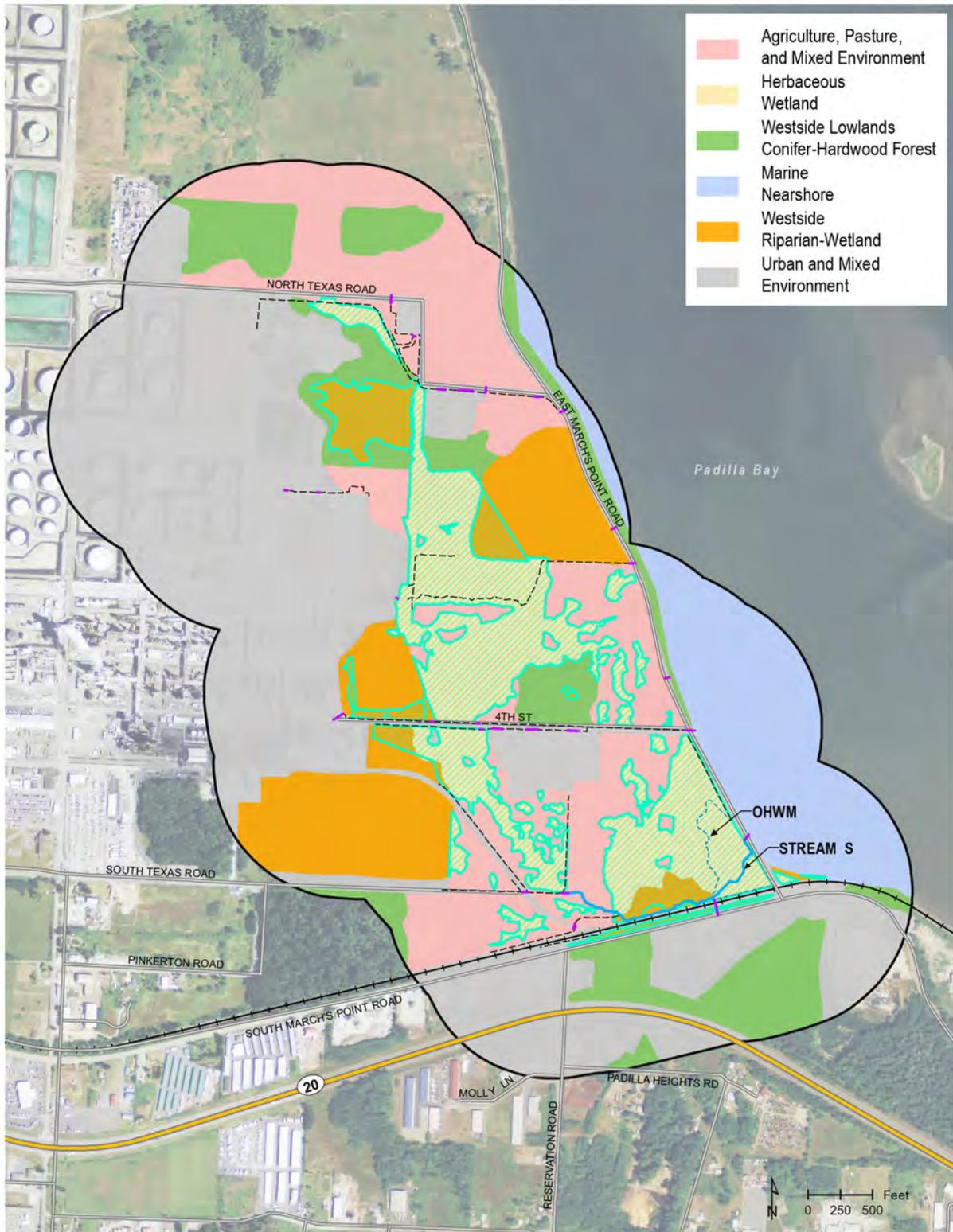
Laws, Regulations, and Guidance	Description
Skagit County Shoreline Master Program (SCC 14.26)	The Shoreline Master Program (SMP) is comprised of local land use policies and regulations designed to manage shoreline use. The SMP protects natural resources for future generations, provides for public access to public waters and shores, and plans for water dependent uses. It was created in partnership with the local community and Ecology and must comply with the Shoreline Management Act and Shoreline Master Program Guidelines.

A quantitative analysis was conducted for direct impacts to vegetation and terrestrial wildlife on the proposed project and wetland mitigation sites. Potential impacts to vegetation and wildlife resources along the Anacortes Subdivision were qualitatively analyzed. The following existing documents and data were reviewed to provide a description of the extent and condition of existing vegetation communities, occurrence of listed plants and terrestrial wildlife species, and potential suitable terrestrial habitat:

- U.S. Fish and Wildlife Service (USFWS 2015) National Wetland Inventory Wetlands Mapper.
- Natural Vegetation of Oregon and Washington (Franklin and Dyrness 1988).
- Washington State Gap Analysis Program (WDFW 2016b).
- **Wildlife–Habitat Relationships in Oregon and Washington (Johnson and O’Neil 2001).**
- Washington Department of Fish and Wildlife (WDFW 2016a) Priority Habitat and Species database.
- WDFW Priority Habitat and Species Management Recommendations, Volumes I, III, and IV (Larsen 1997, Larsen et al. 1995, Larsen et al. 2004).
- Washington State Department of Natural Resources Natural Heritage Information (WNHP 2015).
- Washington State Department of Transportation (WSDOT 2015) Biological Assessment (BA) Preparation for Transportation Projects.
- University of Washington NatureMapper (2016).
- Skagit County (2016a) iMAP.
- Skagit County (2016b) Noxious Weed List.
- Project aerial photography.

A site visit was conducted on December 8, 2015, to review existing conditions at the proposed project and wetland mitigation sites. No species-specific surveys were conducted for this analysis.



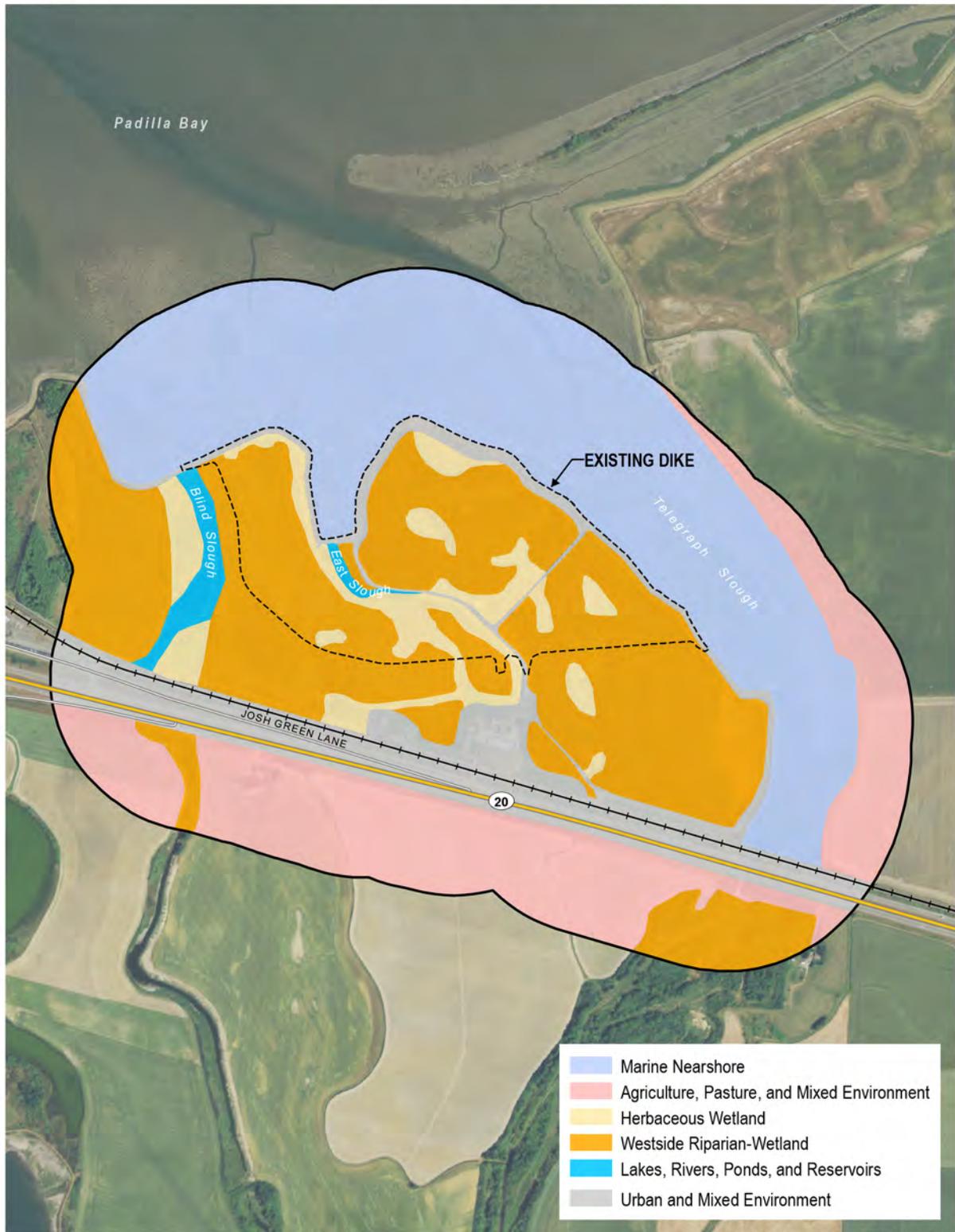


DATA SOURCE: (AECOM 2015, NAIP 2013, NWHI 2015, Skagit County 2015, WSDOT 2015)

Figure 3.6-1
EXISTING VEGETATION COMMUNITIES –
PROPOSED PROJECT SITE

- Wetland
- Study Area
- Existing Ditch
- Existing Stream
- OHWM
- Existing Culvert
- Anacortes Subdivision
- Local Road
- State Highway





 Proposed Wetland Mitigation Site Anacortes Subdivision
 Study Area Local Road
 State Highway

DATA SOURCE: (AECOM 2016, NWHI 2015, Skagit County 2015, WSDOT 2015, NAIP 2013)

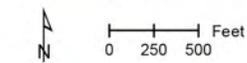


Figure 3.6-2
EXISTING VEGETATION COMMUNITIES –
WETLAND MITIGATION SITE



Existing vegetation communities were mapped using a Geographic Information System (GIS)-based land cover analysis of the study area, available literature and inventories, project-specific studies, and observations from a site visit. Vegetation communities were categorized into land cover types based on similarities in landscape features (for example, types of vegetation and level of vegetation disturbance and management).

Terrestrial wildlife species and habitat were evaluated using the results of the vegetation community analysis identified in **Johnson and O'Neil (2001)**. Information provided by Shell (URS 2013; AECOM 2016a and 2016b) and additional information from Washington Department of Fish and Wildlife (WDFW), U.S. Fish and Wildlife Service (USFWS), and other sources were incorporated into the analysis to determine potential habitat use by wildlife in the study area.

Potential impacts of project construction and operation on vegetation and terrestrial wildlife were evaluated relative to the no action alternative. Impacts can be either adverse or beneficial.

Direct impacts affect vegetation communities and wildlife habitat, special-status plants, and terrestrial wildlife species occurrence and habitat, and can result from temporary and permanent construction activities. Direct impacts were calculated using temporary and permanent footprints overlaid on GIS data at both the proposed project and wetland mitigation sites. The analysis also used the results from the noise study (see Chapter 3.9 – Noise and Vibration) to evaluate potential noise impacts associated with construction and operations at the project site on key wildlife species.

Indirect impacts were qualitatively analyzed at the proposed project and wetland mitigation sites. The analysis considered such factors as the potential impacts of the train operations on species and habitat, the regional significance of the resource, wildlife habitat value, degree of fragmentation and loss of the habitat following project implementation, and impacts to overall habitat quality. Temporary and long-term indirect impacts due to disturbances from increases in human access, noise, and light were also assessed.

Criteria for determining the significance of impacts were developed by considering the context and magnitude, duration, and degree of potential environmental impacts as specified in the State Environmental Policy Act (SEPA). Washington Administrative Code (WAC 197-11-794) defines “significant” as “a reasonable likelihood of more than a moderate adverse impact on environmental quality.”

Significant negative impacts to vegetation are defined for this project as:

- Loss of native vegetation that results in a substantial and permanent decrease in extent, connectivity, or integrity of upland or vegetated wetland habitat in the contributing watershed and that would impair the function of impacted vegetative communities.
- Establishment of invasive plant species that results in a decrease in extent, connectivity, or integrity of native vegetation communities.



- Loss of sensitive plant communities or suitable habitat.

Significant negative impacts to terrestrial species and habitat from project-related construction, operations, or human activity are defined as:

- Loss of breeding habitat that would adversely affect the population viability of a species.
- Loss of nonbreeding wildlife habitat that results in a significant decrease in extent, connectivity, or integrity of habitat in the watershed.
- Injury, death, or harassment of wildlife that would adversely affect the population viability of a species.

Impact significance criteria for federally-listed threatened and endangered species were based upon findings in the biological evaluation prepared for the proposed project (AECOM 2016a), the WSDOT (2015) BA manual, and potential direct and indirect impacts of the proposed project identified during the preparation of this environmental impact statement (EIS). The analysis also identified any mitigation measures, commitments, and monitoring procedures associated with project impacts on plants and terrestrial species and habitat.

AFFECTED ENVIRONMENT

Proposed Project and Wetland Mitigation Sites

The study area is located in the western hemlock forest vegetation zone of the Puget Lowland physiographic province (Franklin and Dyrness 1988) and within the watersheds of Telegraph Slough-Frontal Padilla Bay, Padilla Bay-Strait of Georgia, and Skagit River-Frontal Skagit Bay (Hydrologic Unit Code 1711000203, 171100020303, and 171100010500). The wetland mitigation site and Anacortes Subdivision are located in extensive floodplains associated with the post-glacial Skagit River delta system. The Swinomish Channel is the main remnant distributary channel in the study area. Telegraph Slough and several other remnant distributary channels are also present but are mostly cut off from Padilla Bay by roads, levees, or dikes. The Shell Puget Sound Refinery (PSR) site on March Point peninsula is located on a raised marine terrace at least 160 feet above the Skagit River floodplain (Bulthuis 2013).

Native vegetation communities and wildlife habitat have been substantially altered and fragmented since the early 19th century due to land clearing, dredging, and diking of tidelands for agriculture and maritime navigation, and development of rail and road transportation systems.

Portions of the proposed project site on March Point were cleared for agricultural land use starting in the mid-1800s (City of Anacortes 2016). The existing rail line in the southern portion of the proposed project site (i.e., the Anacortes Subdivision) was originally built in 1890 (Skagit County 2015), and roads in the study area were built starting in the early 20th century. The March Point peninsula was dominated by deciduous and coniferous forest prior to the development of the Shell and Texaco (now Tesoro) refineries in the 1950s (Skagit County 2016a, Historylink 2016).



The wetland mitigation site was a tidal marsh before it was diked and drained for agriculture in the late 1800s. It was used for grain and vegetable crop production until it was converted to a hybrid poplar tree farm in 1997 (AECOM 2016b).

The Anacortes Subdivision is located within the Skagit Valley, which was converted from a large delta system with extensive sloughs, salt marshes, and mud flats to agricultural land starting in the 19th century.

Vegetation

Table 3.6-2 summarizes the locations of existing vegetation communities and land cover types **identified within the study area following descriptions in Johnson and O'Neil (2001).**

Table 3.6-2 Vegetation Communities and Land Cover Type Descriptions

Vegetation Community/Land Cover Type	Description
Urban and mixed environs	Man-made transportation corridors, buildings, impermeable surfaces, bridges, dams, devoid of native vegetation
Agricultural, pasture, and mixed environs	Cultivated croplands, modified grasslands, and mowed, hayed, or grazed pastures
Lowland conifer-hardwood forest	Upland tree stands dominated by evergreen conifers and/ or deciduous trees
Westside riparian-wetland	Freshwater forested and scrub-shrub wetlands and forested/shrub vegetation associated with rivers and streams
Herbaceous wetlands	Freshwater emergent wetlands
Lakes, rivers, ponds, and reservoirs	Freshwater aquatic habitat; vegetation may occur at the margins but features are mostly unvegetated
Bays and estuaries	Lower reaches of rivers, estuarine wetlands, intertidal sand and mud flats, estuarine wetlands
Marine nearshore	Marine water areas along shorelines not significantly affected by freshwater inputs with unvegetated or submerged vegetated habitat



Proposed Project Site

Vegetation that currently occurs at the project site is predominantly pasture that has been used for cattle grazing, with remnant isolated patches of mixed deciduous-coniferous, second-growth forests. The west side of the project site is comprised of developed industrial land associated with the existing Shell PSR facilities. Estuarine habitat is located in the southeast corner of the Shell PSR property, and nearshore marine habitat in Padilla Bay is found to the east of the project site.



Nootka rose

Vegetation Communities

Table 3.6-3 summarizes vegetation communities and land cover type composition and prevalence within the project site and surrounding study area. Please refer to Chapter 3.5 – Wetlands, for a detailed description of freshwater wetlands within the project site, and Chapter 3.4 – Fish and Aquatic Species and Habitat, for details on freshwater, tidal, and nearshore aquatic habitat in the project vicinity.

Table 3.6-3 Vegetation Communities and Land Cover Type Prevalence – Project Site

Vegetation Community/ Land Cover Type	Occurrence in the Project Site and Surrounding Study Area and Dominant Vegetation ¹	Prevalence in this Portion of the Study Area (approximate)
Urban and mixed environs	This is the predominant cover type in this portion of the study area and encompasses developed portions of the Shell PSR site, Anacortes Subdivision, roads, and businesses south of the proposed project site. Vegetation is sparse and consists of introduced plant species near the edge of rail and road rights of way and facility perimeters.	39% (249 acres)
Agricultural, pasture and mixed environs	Undeveloped portions of the Shell PSR site mainly consist of pasture that has been heavily grazed by cattle. Dominant native and introduced plant species include velvetgrass (<i>Holcus lanatus</i>), bentgrasses (<i>Agrostis spp.</i>), fescues (<i>Festuca spp.</i>), crested dogtail (<i>Cynosurus cristatus</i>), Kentucky bluegrass (<i>Poa pratensis</i>), meadow foxtail (<i>Alopecurus pratensis</i>), clovers (<i>Trifolium spp.</i>), dandelion (<i>Taraxacum officinale</i>), birds-foot trefoil (<i>Lotus corniculatus</i>), garden vetch (<i>Vicia sativa</i>), hairy vetch (<i>Vicia hirsuta</i>), mouse-ear chickweed (<i>Cerastium glomeratum</i>), wheatgrass (<i>Agropyron sp.</i>), Coastal wormwood (<i>Artemisia suksdorfii</i>), Fuller's teasel (<i>Dipsacus fullonum</i>), and lesser hawkbit (<i>Leontodon saxatilis</i>). Noxious weeds found in the pastures are discussed in the "Noxious Weeds" subsection in this chapter.	18% (112 acres)



Vegetation Community/ Land Cover Type	Occurrence in the Project Site and Surrounding Study Area and Dominant Vegetation ¹	Prevalence in this Portion of the Study Area (approximate)
Herbaceous wetlands	Emergent wetlands are the predominant wetland vegetation community in this portion of the study area, and mainly occur in grazed pastures. These wetlands are temporarily or occasionally flooded to seasonally saturated. Plant species composition is similar to agricultural/pasture vegetation described above.	12% (74 acres)
Westside riparian-wetland	<p>Forested and scrub-shrub wetlands occur in fragmented patches throughout the proposed project site and surrounding study area. These are depressional wetlands with seasonal inundation and slope wetlands that are temporarily flooded or seasonally saturated. Dominant tree species are red alder (<i>Alnus rubra</i>), black cottonwood (<i>Populus balsamifera</i>) and Pacific willow (<i>Salix lasiandra</i>); scattered quaking aspen (<i>Populus tremuloides</i>) and western red cedar (<i>Thuja plicata</i>) also occur. Common understory shrub and emergent species in these wetlands include salmonberry (<i>Rubus spectabilis</i>), Nootka rose (<i>Rosa nutkana</i>), Douglas spirea (<i>Spiraea douglasii</i>), black twinberry (<i>Lonicera involucrata</i>), Sitka willow (<i>Salix sitchensis</i>), lady fern (<i>Athyrium filix-femina</i>), and fringecup (<i>Tellima grandiflora</i>).</p> <p>One patch of riparian vegetation associated with Stream S occurs in the southern portion of the Shell PSR site. Native vegetation consists of black cottonwood and red alder, Douglas spirea, Nootka rose, Sitka willow, and snowberry (<i>Symphoricarpos albus</i>). However, it is a small, isolated vegetation community with no connectivity to larger riparian corridors. No other riparian vegetation occurs in this portion of the study area.</p>	11% (73 acres)
Lowland conifer-hardwood forest	<p>Remnant patches of upland coniferous and deciduous forest are found throughout the proposed project site and surrounding area. Dominant tree species are red alder, black cottonwood, paper birch (<i>Betula papyrifera</i>), western red cedar, Douglas fir (<i>Pseudotsuga menziesii</i>), bigleaf maple (<i>Acer macrophyllum</i>), quaking aspen, and grand fir (<i>Abies grandis</i>).</p> <p>Common native and introduced understory shrubs include salmonberry, trailing blackberry (<i>Rubus ursinus</i>), snowberry, Indian plum (<i>Oemleria cerasiformis</i>), tall Oregon grape (<i>Mahonia aquifolium</i>), red elderberry (<i>Sambucus racemosa</i>), Pacific crabapple (<i>Malus fusca</i>), red huckleberry (<i>Vaccinium parvifolium</i>), vine maple (<i>Acer circinatum</i>), oceanspray (<i>Holodiscus discolor</i>), and coast black gooseberry (<i>Ribes divaricatum</i>).</p> <p>Herbaceous species in the understory include sword fern (<i>Polystichum munitum</i>), northern woodfern (<i>Dryopteris expansa</i>), bracken fern (<i>Pteridium aquilinum</i>), stinging nettle (<i>Urticadioica</i>), fringecup, Siberian miner's lettuce (<i>Claytonia sibirica</i>), common bedstraw (<i>Galium aparine</i>), and bittercress (<i>Cardamine</i> sp.).</p>	10% (66 acres)



Vegetation Community/ Land Cover Type	Occurrence in the Project Site and Surrounding Study Area and Dominant Vegetation ¹	Prevalence in this Portion of the Study Area (approximate)
Marine nearshore	Padilla Bay is a broad, flat embayment filled with sediment from the Skagit River, creating a shallow, flat, and muddy landform. The bay is so shallow that it is almost entirely intertidal, exposing miles of mud flats. Large eelgrass (<i>Zostera</i>) meadows thrive in this intertidal habitat. See Chapter 3.4 – Fish and Aquatic Species and Habitat for more detail on nearshore habitat.	10% (61 acres)
Bays and estuaries	Estuarine wetlands connected to Padilla Bay occur in the southeast corner of the Shell PSR site. This area is fenced off from cattle grazing. Dominant plant species include salt grass (<i>Distichlis spicata</i>), woody saltwort (<i>Salicornia virginiana</i>), Baltic rush (<i>Juncus balticus</i>), spear saltbush (<i>Atriplex patula</i>), arrowgrass (<i>Triglochin maritima</i>), and Lyngbye's sedge (<i>Carex lyngbyei</i>).	<1% (3 acres)

1. Source: URS 2013, AECOM 2016a, Audubon Society 2016.

Wetland Mitigation Site

The proposed wetland mitigation site is predominantly stands of hybrid poplar trees. The site has not been in active agricultural production since it was planted in 1997 and 1998 (AECOM 2016b). Blind Slough and East Slough, remnant tidal channels that have been isolated from daily tidal input, are located here. Nearshore marine habitat in Padilla Bay and Telegraph Slough is found on the north and east sides of the site.

Vegetation Communities

Table 3.6-4 summarizes vegetation community and land cover type composition and prevalence within the proposed wetland mitigation site and surrounding study area.

Table 3.6-4 Vegetation Community and Land Cover Type Prevalence – Wetland Mitigation Site

Vegetation Community/Land Cover Type	Occurrence in the Wetland Mitigation Site and Surrounding Study Area and Dominant Vegetation ¹	Prevalence in this Portion of the Study Area
Marine nearshore	Padilla Bay and Telegraph Slough adjoin the north and east sides of the wetland mitigation site, respectively. Salt marsh habitat is located immediately waterward of the levees, transitioning into mudflats farther into the bay. Pickleweed (<i>Sarcocornia perennis</i>), salt grass, and atriplex occur in the low salt marsh habitat; eelgrass beds occur waterward of the levees. See Chapter 3.4 – Fish and Aquatic Species and Habitat, for more details on nearshore habitat.	31% (160 acres)



Vegetation Community/Land Cover Type	Occurrence in the Wetland Mitigation Site and Surrounding Study Area and Dominant Vegetation ¹	Prevalence in this Portion of the Study Area
Westside riparian-wetland	<p>This is the predominant terrestrial community in the wetland mitigation site and surrounding study area and is comprised of hybrid poplar (<i>Populus trichocarpa</i> x <i>P. Deltoides</i>) trees planted in 1997. Many of the trees throughout the site are dead or dying due to waterlogged roots and contact with interstitial saltwater from Padilla Bay.</p> <p>Dense Himalayan blackberry, a noxious weed, is the dominant understory species throughout the wetland mitigation site. Scattered black twinberry, paper birch, willowherb (<i>Epilobium ciliatum</i>), velvetgrass, colonial bentgrass (<i>Agrostis capillaris</i>) and sword fern (<i>Polystichum munitum</i>) are also present.</p> <p>South of the wetland mitigation site, woody wetland and riparian vegetation associated with Blind and Telegraph sloughs are present.</p>	31% (159 acres)
Agriculture, Pasture, and Mixed Environs	Located south of State Route (SR) 20 in this portion of the study area, intensively farmed croplands, and modified grasslands support a wide variety of commercial crops and feed for livestock production. Fallow fields frequently flood in the winter.	18% (92 acres)
Urban and mixed environs	This cover type includes the dikes, residences and associated structures located on the mitigation site, SR 20, and the Anacortes Subdivision. Vegetation mainly occurs on the dikes and is comprised of tall fescue (<i>Festuca arundinacea</i>), bentgrass, velvetgrass, and white clover (<i>Trifolium repens</i>).	13% (64 acres)
Herbaceous wetlands	Patches of emergent wetlands are located in low areas too wet for hybrid poplars to establish. Colonial bentgrass is dominant; scattered salt-tolerant species including salt grass, pickleweed, Canadian sandspurry (<i>Spergularia canadensis</i>), brass buttons (<i>Cotula coronopifolia</i>), and atriplex (<i>Atriplex</i> sp.) are also present.	6% (29 acres)
Lakes, rivers, ponds, and reservoirs	Blind Slough and East Slough are included in this land cover type. They are relic tidal channels that no longer have surface connections to Padilla Bay. They contain shallow, brackish water. East Slough currently functions as a drainage ditch that drains north into Padilla Bay via a pump station; Blind Slough is a brackish pond that outflows mainly to the south. Salt-tolerant forbs and grasses grow along the margins of the sloughs.	1% (6 acres)

1. Source: AECOM 2016a.



Special Status Plants

Special status plants are vascular and non-vascular plant species that are classified at the federal or state level as endangered, threatened, a species of concern, sensitive species, or candidate species (Washington Native Plant Society 2016). Washington Natural Heritage Program (WNHP 2015) does not depict any special status plants on the proposed project or wetland mitigation sites. The nearest documented occurrence of a special-status plant is black lily (*Fritillaria camschatcensis*) located more than 5 miles to the southwest of these sites.

Special status plants are vascular and non-vascular plant species that are classified at the federal or state level as endangered, threatened, a species of concern, sensitive species, or candidate species (Washington Native Plant Society 2016; WNHP 2015).

Noxious Weeds

Noxious weeds are invasive, nonnative plants that are highly destructive, competitive, or difficult to control by cultural or chemical practices (WAC 16-750-001). The Washington State Weed Board and the Washington State Department of Agriculture (WSDA) county noxious weed control boards implement the state’s noxious weed law (Chapter 17.10 RCW), which identifies three classes of noxious weeds (WAC 16-750-003):

- Class A noxious weeds are not native to the state, are of limited distribution or are unrecorded in the state, and pose a serious threat to the state.
- Class B noxious weeds are not native to the state, are of limited distribution or are unrecorded in a region of the state, and pose a serious threat to that region.
- Class C noxious weeds refer to any other noxious weeds not identified in Class A or Class B.

The Skagit County Noxious Weed Control Board has adopted **the State’s** County Weed List to include all Class A weeds, Class B-Designate weeds, and those Class B and Class C weeds selected for control (Skagit County 2016b). Table 3.6-5 lists the Skagit County noxious weeds that are documented to occur on both the proposed project and wetland mitigation sites, respectively (URS 2013; AECOM 2016a; Riggs 2011).

Table 3.6-5 Documented Noxious Weeds – Proposed Project and Wetland Mitigation Sites

Scientific Name	Common Name	Skagit County Noxious Weed Class ¹	Location ²
<i>Cytisus scoparius</i>	Scot's broom	B	P
<i>Daphne laureola</i>	Spurge laurel	B	P
<i>Hypochaeris radicata</i>	Hairy cat's-ear	B	P, M
<i>Lepidium latifolium</i>	Perennial pepperweed	B	M
<i>Leucanthemum vulgare</i>	Ox-eye daisy	B	P



Scientific Name	Common Name	Skagit County Noxious Weed Class ¹	Location ²
<i>Sonchus arvensis ssp. arvensis</i>	Field sow-thistle	B	M
<i>Cirsium arvense</i>	Canada thistle	C	P, M
<i>Cirsium vulgare</i>	Bull thistle	C	P, M
<i>Hypericum perforatum</i>	Common St. John's wort	C	P
<i>Linaria vulgaris</i>	Butter-and-eggs	C	M
<i>Phalaris arundinacea</i>	Reed canarygrass	C	P, M
<i>Rubus armeniacus</i>	Himalayan blackberry	C	P, M
<i>Rubus laciniatus</i>	Evergreen blackberry	C	P, M
<i>Senecio vulgaris</i>	Common groundsel	C	P, M
<i>Tanacetum vulgare</i>	Common tansy	C	P, M

1. Source: Skagit County 2016b.

2. P= Project Site; M= Wetland Mitigation Site.

In addition to the species detected on the proposed project and wetland mitigation sites, several other Class A, B, and C noxious weeds are known to occur in Skagit County (2016b), and could also occur in the study area if suitable habitat or a dispersal source were present. Aquatic invasive species are discussed in Chapter 3.4 – Fish and Aquatic Species and Habitat.

Anacortes Subdivision

The Anacortes Subdivision is located in the expansive farmlands of the Skagit Valley, with areas of residential, industrial and commercial development. The western portion of the rail line and surrounding study area crosses estuarine and nearshore tidal habitat associated with the Swinomish Channel and relict sloughs and distributary channels. The eastern portion is located in the City of Burlington.

Vegetation Communities

Table 3.6-6 and Figures 3.6-3 and 3.6-4 summarize and illustrate the vegetation communities and their dominant vegetation and prevalence within the Anacortes Subdivision and surrounding study area.



Table 3.6-6 Vegetation Communities and Land Cover Types – Anacortes Subdivision

Vegetation Community/Land Cover Type	Occurrence along the Anacortes Subdivision and in the Surrounding Study Area and Dominant Vegetation ¹	Prevalence in this Portion of the Study Area (approximate)
Agricultural, pasture and mixed environs	This is the predominant vegetation community in this portion of the study area. Intensively farmed croplands, and modified grasslands support a wide variety of commercial crops and feed for livestock production. Fallow fields frequently flood in the winter.	70% (2,431 acres)
Urban and mixed environs	This cover type includes the Anacortes Subdivision, SR 20, roads, industrial, commercial and residential sites, and the City of Burlington. Sparse vegetation occurs near the edge of rail and road rights of way. Residential and commercial landscaping in the City of Burlington likely consists of non-native and introduced ornamental plant species.	15% (539 acres)
Marine nearshore	This cover type includes Swinomish Channel at the mouth of Padilla Bay and Telegraph Slough on the north side of SR 20. Patches of eelgrass are also present in deeper waters of the channel and bay. See Chapter 3.4 – Fish and Aquatic Species and Habitat, for more detail.	9% (320 acres)
Herbaceous wetlands	Large patches of emergent wetlands are associated with Telegraph Slough and Blind Slough in the western portion of the Anacortes Subdivision. Patches of non-farmed emergent wetlands are scattered throughout croplands in this area. Salt-tolerant grasses and forbs are expected to be predominant near the relict sloughs, whereas invasive species such as reed canarygrass are expected to be predominant in wetlands adjoining croplands.	2% (75 acres)
Bays and estuaries	Includes estuarine wetlands fringing the Swinomish Channel. Salt-tolerant grasses and forbs occur in this land cover type.	2% (58 acres)
Westside lowlands conifer-hardwood forest	One block of second-growth mixed deciduous and coniferous forest is located south of the Skagit Regional airport. Portions of the vegetation community have been recently logged.	1% (46 acres)
Westside riparian-wetland	Patches of deciduous forest and shrub vegetation are scattered throughout the area, and are mainly associated with relict distributary channels in the Skagit Valley.	<1% (12 acres)
Lakes, rivers, ponds and reservoirs	Blind Slough, East Slough and other relict tidal channels occur in the western portion of the study area. They do not receive daily tidal input, but still contain shallow, brackish water and support salt-tolerant forbs and grasses at the margins.	<1% (7 acres)

1. Sources: Skagit County 2016a, Mitchell et al. 2005.



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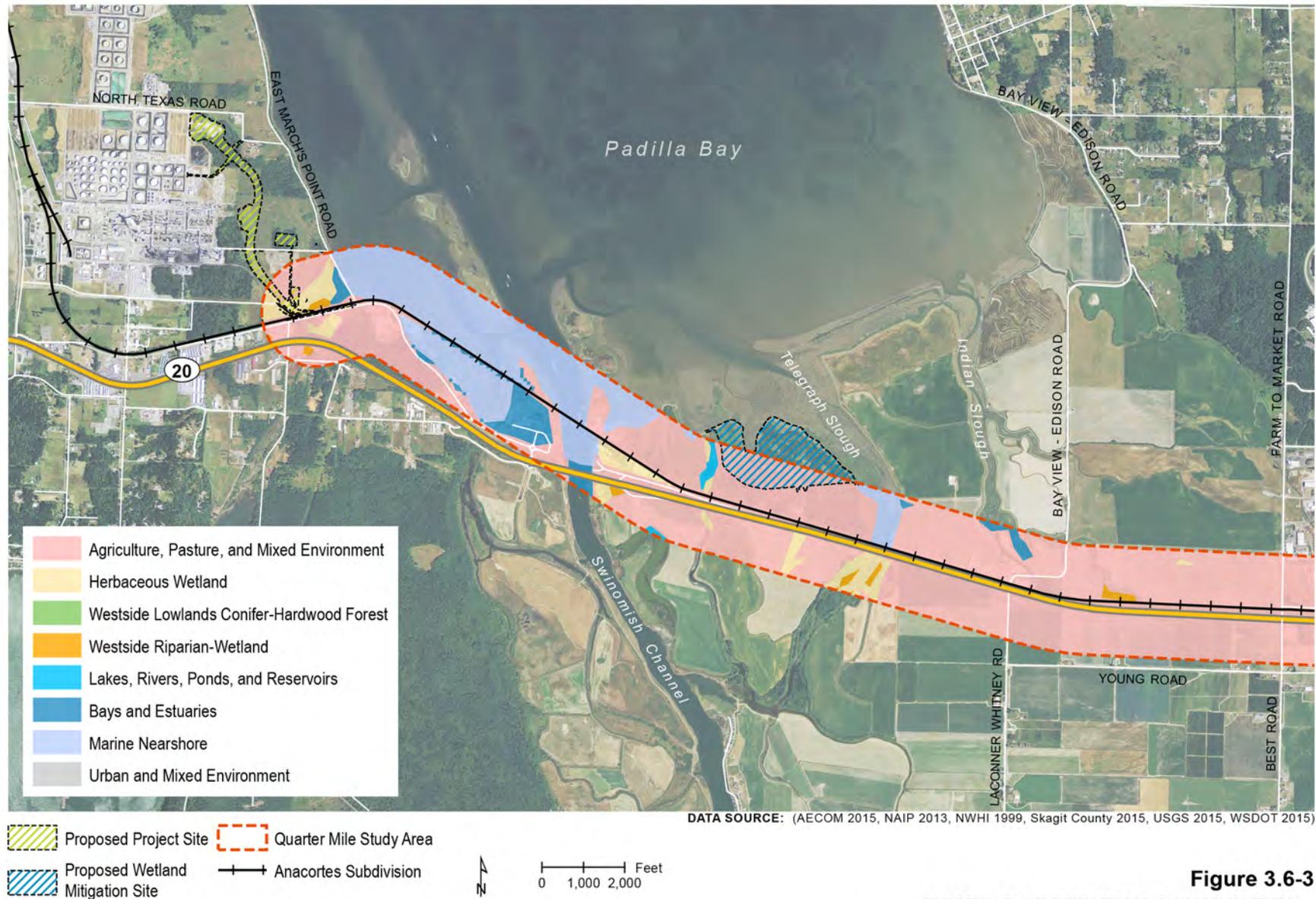


Figure 3.6-3
EXISTING VEGETATION COMMUNITIES –
ANACORTES SUBDIVISION (WEST)



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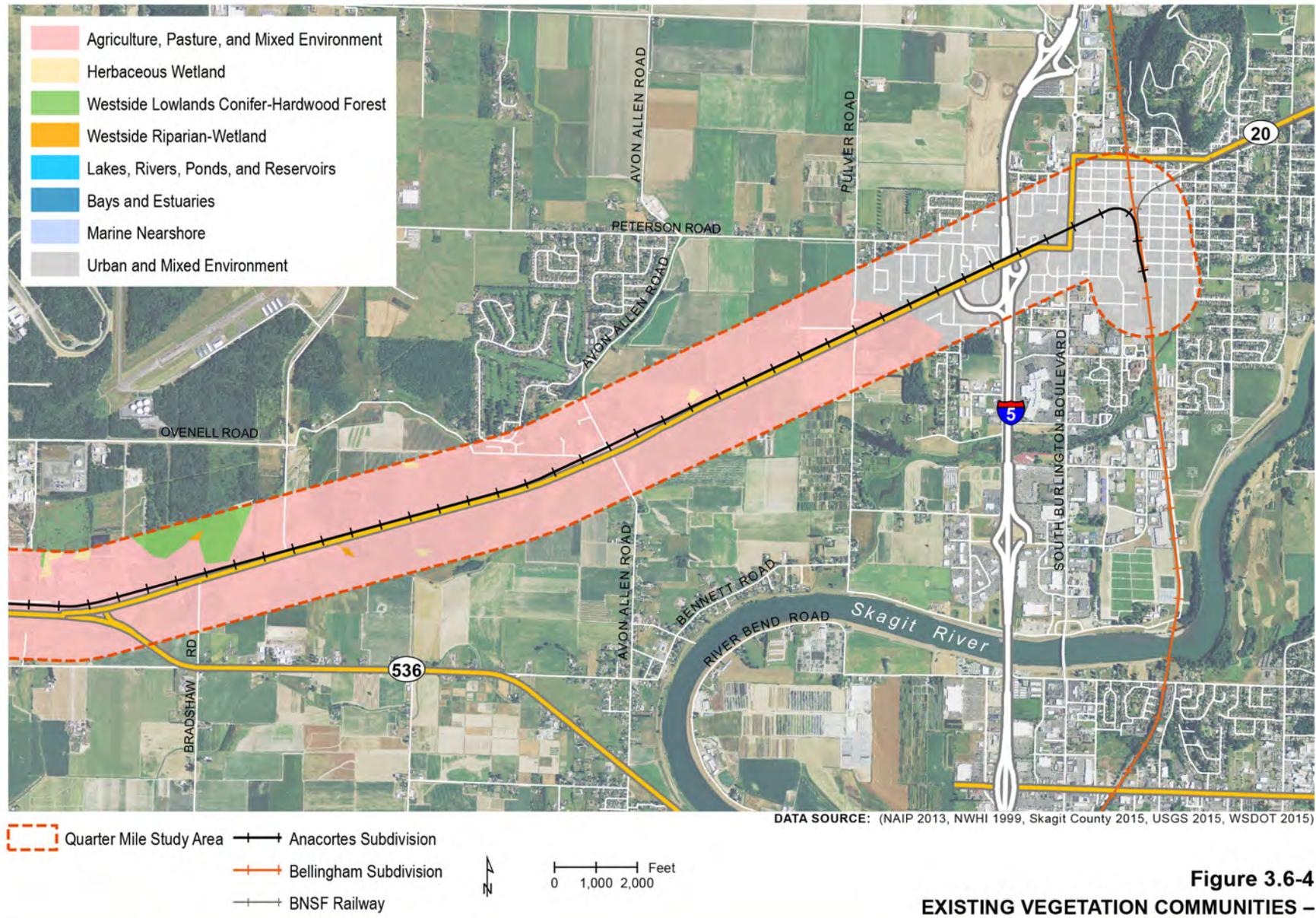


Figure 3.6-4
EXISTING VEGETATION COMMUNITIES –
ANACORTES SUBDIVISION (EAST)



Special Status Plants

The Washington Natural Heritage Program (WNHP 2015) does not depict any special status plants in the Anacortes Subdivision or surrounding study area. The nearest documented occurrence of a special-status plant is of soft-leaved willow (*Salix sessifolia*), a State Sensitive species, located more than 3 miles southeast of the rail line. Most of the special-status plant species that potentially occur in the study area require undisturbed habitat ranging from open grasslands to moist meadows, ponds, and lakes (WNHP 2016).

Noxious Weeds

Smooth cordgrass (*Spartina alterniflora*), a Skagit County Class A weed, occurs at Swinomish Spit near the mouth of Padilla Bay (Riggs 2011). Other noxious weeds in the study area likely originate from agricultural sources such as hay, feed, grain, and crops (Skagit County 2016b). Noxious weeds in the City of Burlington may originate from wildflower seeds, bird seed, ornamentals, and accidentally planted noxious species in residential and commercial landscapes.

Terrestrial Wildlife Species and Habitat

Terrestrial species and habitat evaluated include general wildlife habitat and common species occurrences. This section also presents potential habitat for and occurrence of local, state, and federal lists of terrestrial threatened and endangered species and species of concern, migratory birds, and invasive terrestrial wildlife species.

Proposed Project Site

Wildlife Habitat and Common Species Occurrences

Urban and mixed environs is the primary vegetation community in this portion of the study area, comprising 39 percent of the proposed project site and its surrounding study area (Table 3.6-3), followed by agricultural, pasture, and mixed environs (18 percent); herbaceous wetlands (12 percent); westside riparian-wetlands (11 percent); lowland conifer-hardwood forest (10 percent); marine nearshore (10 percent); and bays and estuaries (<1 percent).



Agriculture, pasture, and mixed environs at the proposed project site

Table 3.6-7 summarizes wildlife habitat and associations for each vegetation community and land cover type (Johnson and O'Neil 2001; URS 2013, AECOM 2016a, Bulthuis 2013; WDFW 2016b; Skagit Audubon Society 2014). Habitat for and occurrence of marine mammals in Padilla Bay is discussed in Chapter 3.4 – Fish and Aquatic Species and Habitat.

See Appendix C for a full list of wildlife species documented to occur or likely to occur in the study area.



Table 3.6-7 Wildlife Associations with Vegetation Communities and Land Cover Types – Proposed Project Site

Vegetation Community/Land Cover Type	Description
Urban and mixed environs	Wildlife use near the Shell PSR and other commercial and industrial sites in the area is likely minimal due to disturbance caused by noise, lights, and other human activity. Smaller mammal species may find shelter or breeding habitat in sheds or out-lying buildings with less human activity. Roads and railroads with more frequent human disturbance limit habitat availability and connectivity. Road kill provides a source of food for some bird and mammal species in the study area. Wildlife expected to occur in this habitat include species adapted to urbanized settings such as raccoons, crows, nonnative songbirds, and rodent species.
Agricultural, pasture, and mixed environs	Wildlife primarily use pastures on the proposed project site for foraging and movement between habitats. Woody vegetation communities located next to pastures may provide nesting sites for some bird and small mammal species, and shelter for mammals, reptiles, and amphibians. Wildlife detected or expected to occur in this habitat include foraging raptors, migratory songbirds, foraging waterfowl, shrews, moles, and rodents, and some native frog and lizard species.
Herbaceous wetlands	Herbaceous wetland habitat is comparable to agricultural, pasture, and mixed environs in the area. The presence of ponded areas provides potential habitat for amphibians, such as Pacific tree frogs, and some bird species that rely on water bodies for breeding. Wildlife species expected to occur in agricultural lands also are likely in this habitat.
Westside riparian-wetland	Wetlands and riparian corridors provide foraging, overwintering, and migration opportunities and a source of water for nearly all the terrestrial species expected to occur in the study area. Most mammals have the potential to breed in this habitat. Dead and downed wood provides foraging, cover, and refuge opportunities. Migratory and resident landbirds and waterfowl that may be found in the study area are wetland/riparian breeders. Certain bat species may have roosting sites in larger blocks of deciduous trees. Amphibians, reptiles, and mammal species associated with this cover type are expected to use, and also may breed in this habitat. However, this habitat is relatively fragmented and nearby disturbances from existing Shell PSR facilities may limit their opportunities.



Vegetation Community/Land Cover Type	Description
Lowland conifer-hardwood forest	<p>Dead and downed wood provides foraging, cover, and refuge opportunities for amphibian, reptile, and mammal species associated with this cover type. Certain bird species also use downed wood for perching, foraging, cover, and nesting. Snags provide potential resting, roosting and nesting, and refugia habitat. Some mammals and reptiles may use forest stands for breeding. Live trees and shrubs provide food and cover for mammals and nesting sites for birds.</p> <p>Cavity-nesting birds, bats, songbirds, salamanders, and mammals such as deer, raccoons, and smaller mammals may use this habitat for a range of life history needs.</p>
Marine nearshore	<p>The portion of Padilla Bay nearest to the Shell PSR site provides key habitat for migrating and overwintering shorebirds. Eelgrass beds in deeper portions of the bay provide habitat for dozens of species of migrating and overwintering dabbling and diving ducks, piscivorous birds, and offer a key stopover site for the black brant, also known as Pacific brent goose (<i>Branta bernicla nigricans</i>). This area also serves as key winter habitat for a unique population of Western High Artic Brant, also known as Grey-belly Brant (<i>Branta bernicula</i>). This WDFW priority habitat is discussed in Special Status Species and Habitat later in this analysis.</p>
Bays and estuaries	<p>Estuarine wetlands and bays adjoining the Shell PSR facility provide stopover sites for migrating shorebirds, waterfowl, and other waterbirds. This habitat is also a food source for resident and overwintering waterfowl, birds of prey, and gulls that occur in the study area. The vegetated estuarine wetlands have potential nesting habitat for herons and heron-like birds, rails, and other water-associated birds that breed in the Puget Lowlands. Bats may forage over open water. Amphibians generally are not associated with this habitat, although northern red-legged frogs may breed in brackish water.</p>

Wetland Mitigation Site

Wildlife Habitat and Common Species Occurrences

Marine nearshore and westside riparian-wetland are the primary vegetation communities at the wetland mitigation site and surrounding study area, each comprising 31 percent of the area (Table 3.6-4). These communities are followed in dominance by agricultural, pasture, and mixed environs (18 percent); urban and mixed environs (13 percent); herbaceous wetlands (6 percent); and lakes, rivers, and ponds (1 percent).



Table 3.6-8 summarizes wildlife habitat and species associations for each vegetation community and land cover type (URS 2013, AECOM 2016a, Bulthuis 2013; WDFW 2016b; Skagit Audubon Society 2014). Appendix C provides a full list of wildlife species documented to occur or likely to occur in the study area.

Table 3.6-8 Wildlife Associations with Vegetation Communities and Land Cover Types – Wetland Mitigation Site

Vegetation Community/Land Cover Type	Description
Marine Nearshore	Padilla Bay provides key habitat for bird species comparable to those described for the proposed project site; the bay is also designated as WDFW priority habitat. Telegraph Slough is part of WDFW's Skagit Wildlife Area and provides opportunities for bird watching, waterfowl hunting, and wildlife viewing. A private hunting club uses the nearshore habitat of Padilla Bay waterward of the existing dikes. River otters have been observed near tidal flats.
Westside riparian-wetland	The wetland mitigation site has larger contiguous, relatively undisturbed blocks of habitat and is generally surrounded by less development. There is greater opportunity for landbirds, waterfowl, amphibians, reptiles, and mammals associated with this cover type to use and breed in this habitat compared with the proposed project site.
Agricultural, pasture, and mixed environs	Foraging is likely the most common activity of wildlife in intensely farmed croplands located to the south of the wetland mitigation site. Breeding habitat is minimal due to the ephemeral nature of potential nesting structures. Some species may breed in adjoining windbreaks, fence rows, and field borders that are not actively managed. Agricultural fields are key stopover habitat for Neotropical migratory birds, geese, and swans. Foraging raptors and large-to-small-stature mammals also use this habitat.
Urban and mixed environs	Wildlife that use undisturbed areas in the poplar farm may traverse residences and roads. State Route (SR) 20 and the Anacortes Subdivision have fragmented habitat and may limit wildlife movement between habitats. However, some mammals likely have adapted to using the Anacortes Subdivision as a corridor because rail traffic is less frequent than vehicular traffic on SR 20. Road kill provides a source of food for some bird and mammal species that occur in the study area.
Herbaceous wetlands	Herbaceous wetland habitat interspersed within the hybrid poplar stands provide opportunity for amphibian breeding and for a variety of birds to forage and rest.



Vegetation Community/Land Cover Type	Description
Lakes, rivers, ponds, and reservoirs	The permanently ponded Blind Slough and East Slough provide breeding, foraging, and movement opportunities for reptiles and amphibians that can tolerate brackish water, as no fish are known to occur in these sloughs. A range of birds and mammals may also use these areas for general life history needs as they are connected to relatively undisturbed lands. The sloughs are used by waterfowl; Blind Slough is used by a private club for hunting.

Anacortes Subdivision

Wildlife Habitat and Common Species Occurrences

Agricultural, pasture, and mixed environs is the primary vegetation community along the Anacortes Subdivision and surrounding study area, comprising 70 percent of the area (Table 3.6-6). This community is followed in dominance by urban and mixed environs (15 percent), marine nearshore (9 percent), herbaceous wetlands (2 percent); bays and estuaries (2 percent), and westside riparian-wetlands and lakes, rivers, ponds, and reservoirs (<1 percent each). Table 3.6-9 summarizes wildlife habitat and associations for each vegetation and land cover type. Appendix C provides a full list of wildlife species documented to occur or likely to occur in the study area. Habitat for and occurrence of marine mammals in Padilla Bay is discussed in Chapter 3.4 – Fish and Aquatic Species and Habitat.

Table 3.6-9 Wildlife Associations with Vegetation Communities and Land Cover Types – Anacortes Subdivision

Vegetation Community/Land Cover Type	Description
Agricultural, pasture, and mixed environs	Intensely farmed croplands along the Anacortes Subdivision provide similar habitat as those within the wetland mitigation site. Northern harriers, red-tailed hawks, and other raptors and swans were observed foraging in fields in December 2015.
Urban and mixed environs	Wildlife use in the Anacortes Subdivision is comparable to the urban and mixed environment in the wetland mitigation site. Wildlife movement is likely more common among less dense residences and less-traveled farm roads.



Vegetation Community/Land Cover Type	Description
Marine nearshore	Wildlife species that use this habitat at the mouth of the Swinomish Channel in Padilla Bay and at Telegraph Slough are comparable to those found at the wetland mitigation site. The study area includes the Swinomish Spit Game Reserve, which has restricted hunting to allow brant populations enhanced access to graveling sites, eelgrass beds, and resting and preening habitat (Kraege 2014; WAC 232-16-700).
Herbaceous wetlands	The large patches of wetland habitat adjoining relict tidal channels near Swinomish Channel likely support a greater diversity of bird, mammal, and amphibian species. Fragmented wetlands interspersed among croplands may provide foraging habitat for some birds and mammals, and breeding habitat for amphibians if sufficient inundation is present.
Bays and estuaries	Wildlife use habitat at estuarine wetlands fringing the Swinomish Channel are comparable to those near the Shell PSR site. Wildlife use is likely higher in this area because the estuaries are greater in size, extent, and connectivity to other undisturbed habitat.
Westside lowlands conifer-hardwood forest	One isolated block of second-growth mixed forest supports some wildlife normally expected for this habitat, particularly if they have a smaller range and limited need for other habitats. Surrounding roads and development limit wildlife movement through this habitat. Songbirds, small mammals, and some terrestrial salamanders and reptiles may breed here.
Westside riparian wetland	Habitat adjoining Telegraph Slough and other relict tidal channels in the west side of the study area provide foraging, breeding, and migrating habitat for a range of bird and mammal species. Fragmented patches in the Skagit Valley may still provide foraging and migratory habitat, particularly for birds.
Lakes, rivers, ponds, and estuaries	Wildlife use in Blind Slough and another relict channel on the south side of SR 20 is comparable to the wetland mitigation site.



Special Status Wildlife and Habitats – Study Area

Special-Status wildlife and habitats include the following:

- Federal proposed, candidate, threatened, and endangered species and critical habitat, and species that are managed by the Endangered Species Program of the USFWS.
- State Endangered, Threatened, Sensitive, and Candidate species; animal aggregations (e.g., heron colonies, bat colonies) considered vulnerable; and species of recreational, commercial, or tribal importance that are vulnerable.

Table 3.6-10 summarizes special status species that are known to occur or potentially occur in the study area. No federally designated or proposed critical habitat for terrestrial species is documented in the study area. Although it is noted that the Biological Evaluation prepared for the project (AECOM 2016a) does not include the Anacortes Subdivision as part of its action area. Several state-sensitive species (WDFW 2016a) and/or priority areas associated with those species are found in the study area. Species with documented occurrences in the study area are discussed below.

Table 3.6-10 Special Status Wildlife Species Documented or Potentially Occurring in the Study Area

Species	Status	Occurrence in the Study Area ¹
Federally-listed Species and Critical Habitat		
Marbled Murrelet <i>(Brachyramphus marmoratus)</i>	Federal Threatened State Threatened	No breeding habitat but potential foraging habitat is documented in the study area. Critical habitat is designated but not within study area.
Streaked Horned Lark <i>(Eremophila alpestris strigata)</i>	Federal Threatened State Endangered	Not documented in the study area. Inhabits sparsely vegetated grasslands, beaches, islands, and agricultural fields. Currently breeds in south Puget lowlands, coastal sites, and Columbia River sites. Critical habitat is designated but not within study area.
Yellow-billed Cuckoo Western Distinct Population Segment (DPS) <i>(Coccyzus americanus)</i>	Federal Threatened State Candidate	Not documented in the study area. Prefers large contiguous riparian zones for breeding. Smaller patches of woody vegetation may provide migratory habitat. Not documented in Puget lowlands since the 1940s. Critical habitat is proposed but not within study area.



Species	Status	Occurrence in the Study Area ¹
Canada lynx (<i>Lynx canadensis</i>)	Federal Threatened State Threatened	Not documented in the study area. Lynx are typically found in high-elevation forests of northeastern Washington. Critical habitat is designated but not within study area.
Oregon spotted frog (<i>Rana pretiosa</i>)	Federal Threatened State Endangered	Not documented within the study area, but the east end of the Anacortes Subdivision study area lies within a potentially occupied watershed. Historically occurred throughout the Skagit Valley; however, currently known to only occur in the Samish River drainage basin. Require large emergent wetlands with prolonged or permanent inundation for breeding. Critical habitat is proposed but not within the study area.

State-listed Species and Priority Habitats²

Bald Eagle (<i>Haliaeetus leucocephalus</i>)	State Sensitive - breeding areas, communal roosts, regular concentrations	A total of four active nests are currently known to occur in the project study area: two nests are located on the Shell PSR site and two nests occur off-site to the southeast. One active bald eagle nest occurs in the wetland mitigation site area, and Padilla Bay is prime foraging habitat for the species. One active nest is documented near the SR 20/SR 536 junction on the Anacortes Subdivision. The study area also intersects the 660-foot buffer of a nest located in Burlington.
Great blue heron (<i>Ardea herodias</i>)	State Monitor - breeding areas	The March Point Heronry is documented on the periphery of the study area southeast of the Shell PSR site.
Shorebird concentrations	Regular concentrations	Padilla Bay is documented as key habitat for numerous migrating and overwintering shorebird species within the study area.



Species	Status	Occurrence in the Study Area ¹
Waterfowl concentrations	Regular concentrations	Padilla Bay is documented as key habitat for migrating and overwintering waterfowl species within the study area.

1. Sources: AECOM 2016a, USFWS 2016a,b, WDFW 2016a, WDFW 2015, URS unpublished undated data, Padilla Bay NERR 2016, WSDOT 2015, Danilson et al. 2013.
2. WDFW (2008) regulates most species as priority only within areas with known limiting habitats (e.g., breeding areas) or within areas that support a relatively high number of individuals (e.g., regular large concentrations). If limiting habitats are not known, or if a species is so rare that any occurrence is important in land use decisions, then the priority area for a species is described as "any occurrence."

Federally-Listed Species

Marbled Murrelet

Marbled murrelets primarily nest in old growth forests, which are absent from the rail project area; however, they forage in waters up to 55 miles from their nesting habitat (AECOM 2016a). Padilla Bay is within the foraging range of potential marbled murrelet nesting habitat; the bay also provides a source of nearshore forage fish such as Pacific sand lance, Pacific herring, northern anchovy, and capelin. Marbled murrelets are noted to occur in Padilla Bay, in which they are considered uncommon (may be seen or heard in primary habitat) in fall, winter, and spring, and occasional-to-rare (unlikely to be seen or heard, but may be in the area) in summer (Padilla Bay NERR no date).

State-Listed Species and Priority Habitats

Bald Eagle

Two active bald eagle nests occur on the Shell PSR site. One nest adjoins the Anacortes Subdivision rail line, and the other is in a patch of remnant deciduous/coniferous forest located mid-peninsula. Another bald eagle nest documented by WDFW on the Shell PSR site fell out of the nest tree in 2013. Two additional nests occur to the southeast of the project site and were documented as active in 2013. These nests are in proximity to the March Point great blue heron colony (discussed below). The last activity recorded by Shell was in the winter of 2014, at the nest along the Anacortes Subdivision. A pair of eagles was observed in the same nest on the rail line in December 2015, and one eagle was observed at the mid-peninsula nest. One bald eagle nest was discovered in 2016 at the wetland mitigation site, and there was evidence that a pair of eagles attempted to use the nest in May 2016 (Walker 2016). Under federal guidelines, the nest would be considered an active eagle nest, even if the pair was not successful.



Bald eagle

One bald eagle nest is documented near the junction of SR 20 and SR 536 within the study area along the Anacortes Subdivision. WDFW (2016c) last surveyed the nest in 2012 and confirmed



that it was active, with two young nestlings detected. The east end of the study area intersects the edge of a 660-foot buffer of an additional eagle nest located outside of the study area. The 660-foot buffer is a protection zone established to minimize human disturbance to active nests (USFWS 2007). WDFW (2016d) last surveyed the nest in 2009 and confirmed that it was active; two young nestlings were also detected.

In western Washington, territorial eagles generally engage in courtship behavior in January and February. Most eagles begin to incubate their eggs by the third week in March and young hatch by late April (Watson 2006); however, the start of the nesting period for individual pairs can vary considerably year to year (Stinson et al. 2007). Incubation lasts for about 35 days and most young eagles fledge at 11 to 13 weeks, usually during early to mid-July (Watson 2006). Padilla Bay is prime foraging habitat for bald eagles who feed on fish, waterfowl, gull and seabird roasts, as well as the eggs and young of colony-nesting birds, including great blue heron.

Great Blue Heron

The March Point Heronry is a highly productive colony that is considered one of the largest in western North America (Skagit Land Trust 2016). It is located in a stand of mixed coniferous/deciduous forest surrounded by industrial businesses, SR 20, the Anacortes Subdivision rail line, and other roads. Skagit Land Trust (2016) counted 300 nests on accessible land in 2014. The total number of nests is likely higher considering nests that were not counted on private properties (Skagit Land Trust 2016). The heronry is typically occupied from March to August. Egg laying generally occurs in April, although 2015 observations indicate egg laying started as early as March (Eissinger 2007; Padilla Bay NERR 2016). Young are hatched, reared, and fledged from May to July-August (Eissinger 2007).

Heron forage for fish, frogs, and small mammals in Fidalgo and Padilla bays and farmlands in the Skagit Valley. Bald eagles are the primary natural predator of heron eggs and young, particularly in denser eagle nest territories in coastal areas, and are the cause of nest failure in some colonies (Eissinger 2007). However, nearby nesting bald eagles may provide herons and their young some protection from other predators including crows, ravens, and raccoons (Padilla Bay NERR 2009). There is no known published data for bald eagle predation in the March Point Heronry.

Shorebird and Waterfowl Concentrations

Padilla Bay is an extensive shallow bay with associated mudflats and sloughs and contains some of the most extensive eelgrass beds on the West Coast (WDFW 2016; Audubon Society 2016). These sheltered bays and sloughs serve as a critical wintering area for seabirds, ducks, and geese, and provide shelter and food for the large concentrations of waterfowl. Wintering waterfowl use the bay for loafing habitat and graveling sites. Padilla Bay is one of the remaining important overwintering sites for migrating brants, although they also use Padilla Bay as a staging area during autumn and spring migrations (Bulthuis 2013). Herbivorous brants feed almost exclusively on eelgrass in the bay. Other large concentrations of birds documented in the bay include mallards, pintails, green-winged teal, wigeons, dunlins, western sandpipers, and black-bellied plovers (Bulthuis 2013; WDFW 2016a).



Other Protected Wildlife Species

Other species of special interest include those that receive protection but are neither federally- or state-listed, nor considered state priority species. The federal Migratory Bird Treaty Act protects migratory birds including raptors, some species of gulls, waterfowl, swallows, and owls, as well as their eggs, parts, and nests (WSDOT 2006). Skagit County (Chapter 14.24.500 SCC) also designates Fish and Wildlife Habitat Conservation Areas on a site-specific basis according to the official Habitats and Species of Local Importance Map.

Invasive Terrestrial Wildlife

The Washington Invasive Species Council (2011) identifies two priority invasive terrestrial animal species that have the potential to affect native plants, animals, and ecosystems in Washington State—feral swine (*Sus scrofa*) and nutria (*Myocastor coypu*). Neither species has been detected in or near the proposed project or wetland mitigation sites. However, nutria are reported in Skagit County, particularly in canals and ditches, dikes and levees, and reservoirs (EDDMapS 2016; Washington Invasive Species Council 2011) and may occur in canals and ditches in agricultural lands along the Anacortes Subdivision. Agricultural pests regulated under the Washington Administrative Code (WAC, Title 16) are not addressed in this document.

ENVIRONMENTAL IMPACTS

No Action Alternative

Because no construction or operation would take place under the no action alternative, there would be no impacts to terrestrial vegetation or wildlife habitat. The no action alternative includes continued maintenance and repair activities necessary to keep the Anacortes Subdivision rail line operational; therefore, existing land uses would remain the same. Any significant changes to vegetation and wildlife habitat and species occurrences would be driven by trends not related to this project. The proposed wetland mitigation would not be implemented, which would preclude restoration of estuarine and nearshore habitat that historically occurred at the wetland mitigation site.

Proposed Project Site

Direct Impacts to Vegetation

Construction

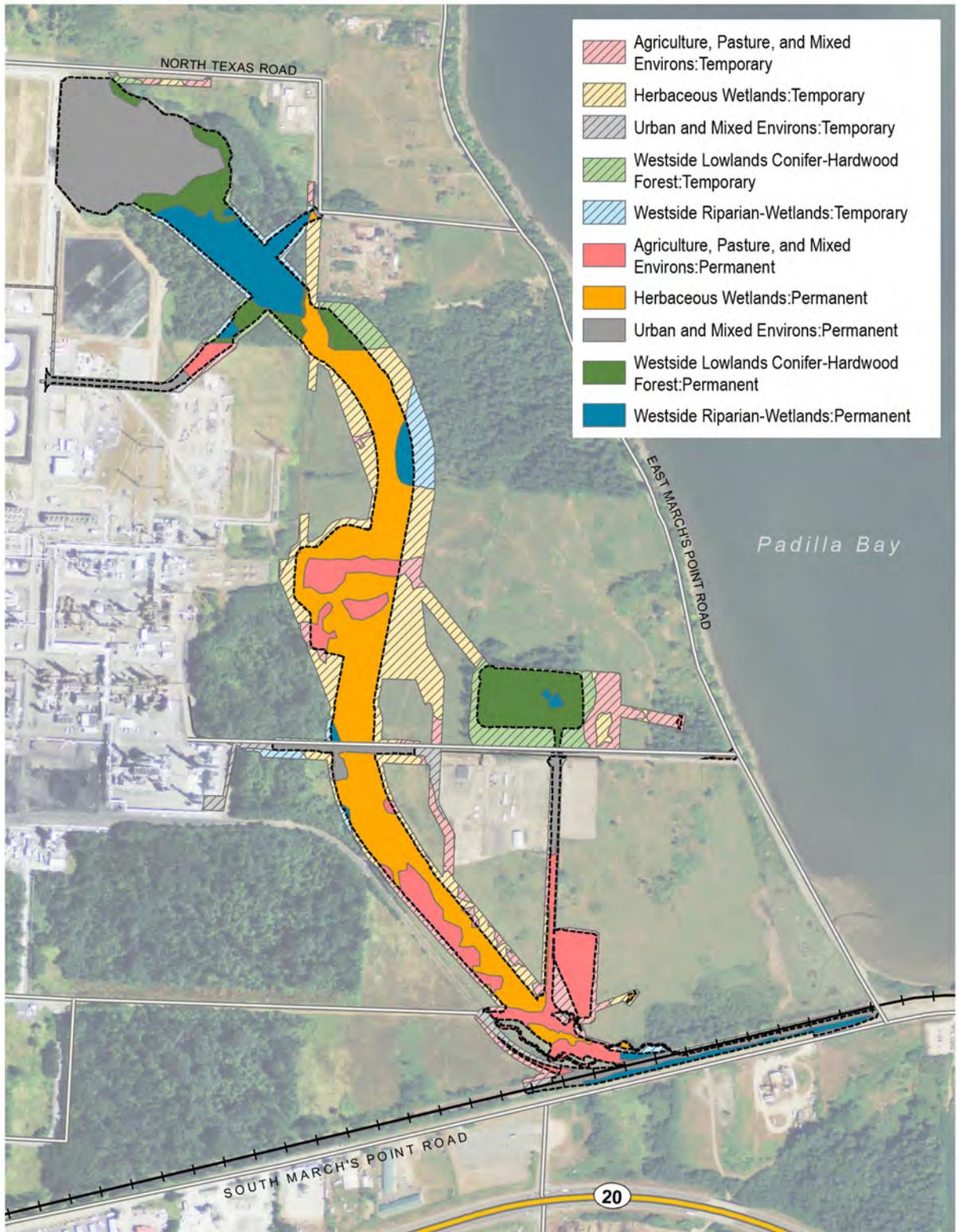
Removal of vegetation would be required to construct the project. The cleared areas would be necessary to accommodate the proposed facility features described in Chapter 2 – Proposed Project and Alternatives. Table 3.6-11 identifies the area of temporary and permanent clearing and the dominant vegetation type. Figure 3.6-5 illustrates the overall impacts the proposed project could have on vegetation communities.



Table 3.6-11 Vegetation Disturbance Areas Associated with the Proposed Project

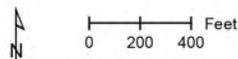
Vegetation Community/ Land Cover Type	Permanent Impacts (acres)	Temporary Impacts (acres)
Agricultural, pasture and mixed environs	7.4	5.4
Herbaceous wetlands	15.9	10.8
Westside riparian-wetland	5.7	2.5
Lowland conifer-hardwood forest	6.4	3.5
Marine nearshore	0	0
Bays and estuaries	0	0
TOTAL	35.4	22.2





DATA SOURCE: (AECOM 2015, HDR 2016, NAIP 2013, NWHI 1999, Skagit County 2015, WSDOT 2015)

Figure 3.6-5
IMPACTS TO VEGETATION COMMUNITIES –
PROPOSED PROJECT SITE



Most of this affected acreage consists of heavily grazed wetland and upland pasture. To the extent feasible, Shell would minimize disturbance to vegetation communities by using existing roads, and cleared areas for staging and access to construction sites.

Construction impacts would be temporary (approximately two years in duration), and would be limited to the period during and immediately following construction. Upon completion of construction, herbaceous wetland and upland areas would be replanted with native grass and forb species. To accommodate rerouted pipelines and retaining walls, approximately 1.22 acres of temporarily affected forested and scrub-shrub wetlands would be converted to emergent wetlands comprised of native herbaceous vegetation. Approximately 0.23 acre of forested wetlands and 2.11 acres of forested wetland buffers would be restored with native trees and shrubs.

The overall permanent impacts of construction on vegetation are not anticipated to be significant because the primary impacts to pasture vegetation are small-scale in the context of the larger contributing Telegraph Slough-Padilla Bay watershed, which is predominantly agriculture and pasture. Forest stands that would be permanently affected comprise approximately 9 percent of forest habitat identified in the study area. The remainder of the forested vegetation communities would not be affected. The project would have negligible impacts on the extent and connectivity, and overall integrity of forest habitat used by wildlife including migratory birds in the immediate Telegraph Slough-Padilla Bay watershed.

Construction of the proposed project is not expected to affect special-status plant species because no plant species or potentially suitable habitat were identified (WNHP 2016). If special-status plant species were present in the construction area, construction activities could affect them through trampling, removal of individuals, habitat degradation, potential spread and colonization of noxious weeds, or erosion and sedimentation. The overall impact of the proposed project on special-status plants is expected to be insignificant. Disturbance to vegetated areas would be mainly within heavily grazed pastures that are unlikely to provide suitable habitat for special-status plant species. Construction may increase the risk of introducing or contributing to the spread of noxious weed species.

Operation

Following construction of the proposed project, operation of the facility is not anticipated to disturb vegetation communities. Ongoing maintenance activities for other facilities are not anticipated to require additional clearing or grading outside the final facility footprint.

Indirect Impacts to Vegetation

Indirect, long-term impacts to vegetation could result from the impacts identified above, such as modification of vegetation, partial shading of wetland vegetation, water quality degradation, and alteration of wetland hydrology sources. The proposed project could also indirectly affect vegetation through the potential spread of nonnative plants and noxious weeds from ground-disturbing activities and dispersal from construction equipment and personnel. The indirect



impacts from the temporary and permanent footprint of the proposed project are expected to be localized and insignificant with the implementation of minimization measures and BMPs.

Additional trains entering the Shell PSR that are proposed under this project are unlikely to contribute substantially to the dispersal of invasive plant species because the unit trains would not carry cargo such as agricultural or food products that could be a source for invasive plant species.

Direct Impacts to Wildlife

Construction Impacts to General Wildlife and Habitat

Construction of the proposed project would temporarily disturb and permanently alter wildlife habitat in the vegetation communities described above. Removing trees, snags, and understory vegetation for the project would result in the loss of potential nesting and foraging sites for many species of birds, as well as reduce the availability of hiding cover for small mammals, and roosting and foraging sites for bats. Earthwork on the site may result in mortality of individual ground-dwelling species such as amphibians and small mammals that cannot flee a construction area.

Construction-related water quality impacts may alter foraging opportunities for waterfowl and other aquatic birds because of disturbances to sediments through in-water work, which could cause water clouding and obscure prey for waterfowl and other aquatic birds. Sedimentation may also affect amphibian breeding habitat due to deposition and settling of sediment particles on eggs. Spills of oil, gasoline, concrete, or other toxic substances have the potential to poison or injure waterfowl, and other wildlife.

Noise and light associated with construction activity can disturb wildlife by causing stress and altering behavior patterns, thereby interfering with activities such as reproduction and feeding. Construction would occur for a period of up to two years and take place during daytime hours. Habitat within 1,045 feet of the construction area could be disturbed from noise. Loud activities could cause some wildlife to move elsewhere, or discourage them from using adjacent habitats. The degree of disturbance would depend on noise level, timing, and duration of construction activities, as well as the sensitivity of the individual species. In the spring and summer months, nesting and rearing activities may be disrupted for amphibians and songbirds whose breeding habitat is more likely to occur near the proposed construction activities. However, this disturbance would be temporary and would not result in a long-term impact to breeding animals after construction is complete.

Nighttime construction is not anticipated at this time; however, lighting associated with potential nighttime construction activities and security operations could be a disturbance, particularly to nocturnal species. In general, most wildlife species found in developed areas are expected to be more adapted to urban conditions, highway noise, and other human disruptions. Wildlife associated with less developed or undeveloped habitat is expected to be less adapted to construction activities. Construction impacts from vegetation removal and earthwork are not anticipated to be significant. Although these activities could result in mortality of some



individual animals and permanent loss of breeding habitat such as freshwater wetlands, the overall impact is not anticipated to adversely affect the population viability of any one species in the immediate project vicinity.

Construction Impacts to Special Status Wildlife and Habitat

Construction would not directly alter marbled murrelet habitat. Noise from construction of the proposed project may reach the nearshore marine environment in Padilla Bay, which marbled murrelets use for foraging. Marbled murrelets may detect noise from construction, in particular asphalt cutting equipment, which could disrupt foraging behavior. Shell would limit asphalt cutting to coincide with low tides, when murrelets would not be foraging in Padilla Bay (AECOM 2016a). Implementation of this measure would minimize such disturbances during construction; therefore, the project would likely have a negligible impact on murrelets in the project vicinity.

Construction of the proposed project would permanently remove the active bald eagle nest near the Anacortes Subdivision in the southern portion of the project site. Shell would mitigate for this loss through design and development of two new bald eagle nesting platforms at least 400 feet from the new rail unloading facility. These platforms are expected to maintain or increase overall nesting opportunities on the project site (Shell Oil Products US 2014).

Vegetation clearing associated with construction work for one of the proposed stormwater facilities would clear overstory trees that provide potential perching and alternate nest sites within 400 feet of the mid-peninsula nest site that would be retained.

Because other special-status species or habitat are not known to occur on the project site, it is unlikely that construction would directly affect these species or habitat. Avoidance and minimization measures would further reduce the likelihood of direct impacts to special-status species.



Active bald eagle nest that would be retained on the project site.

Operational Impacts to General Wildlife and Habitat

Operation of the facility may result in direct, long-term disturbance to wildlife. Such impacts could include increased degradation of habitat quality, increased animal-train collisions, light and glare impacts, **disruption of species' social structures**, avoidance or abandonment of previously occupied areas adjacent to the facility, and obstructions to wildlife movement. The new rail unloading facility would also create a new barrier to formerly contiguous blocks of undeveloped habitat. This has the potential to divide wildlife populations into smaller, more isolated and less stable units, which may reduce access to vital habitats for a variety of wildlife species (FHWA 2010; Jackson 2000). The proposed additional unit trains would operate at up to 10 mph into and out of the Shell PSR facility, which may result in wildlife mortality due to train strikes of animals that are not acclimated to avoiding the new rail line.



Operational noise from the project may result in wildlife avoidance in the immediate vicinity of the new facility (Kaseloo and Tyson 2004); however, this impact is anticipated to be negligible, given the noise from existing operations on the Shell PSR site and other surrounding development. The noise impact analysis presented in Chapter 3.9 – Noise and Vibration, determined that noise resulting from the proposed addition of six train trips per week, on average, which includes intermittent, short horn blasts that may be required on the rail spur for safety reasons, would attenuate to background noise levels within 100 feet of either side of the new tracks. Operational noise may cause short-term species avoidance of the rail line when trains are present, and long-term avoidance of the site by certain species within 100 feet of the rail line. However, wildlife behavior is not anticipated to be significantly altered by operational noise. Potential impacts from an accidental oil spill to surface water are addressed in Chapter 3.3 – Surface Water.

Operational Impacts to Special-Status Species

Operation of the proposed project has the potential to affect behavior of bald eagles. Operation and maintenance of stormwater facilities near the retained bald eagle nest would increase human activity within 200 feet of the existing nest. Forested vegetation surrounding the nest would be permanently removed, making human activity visible from the nest.

Generally, human activity within 660 feet of an active nest may cause eagles to become agitated, which could result in inadequate nest repair, expenditure of energy defending the nest rather than tending to their young, or abandonment of the nest altogether (USFWS 2007). Operation of the proposed facility could have a significant impact on bald eagles if there is a net loss of nesting habitat on the project site. However, in accordance with the conditions of the USFWS bald eagle take permit that authorizes Shell to clear vegetation within 660 feet of the nest, Shell is required to monitor the nest for eagle use during critical months and report activity to the USFWS.

Noise from train operation is not anticipated to affect bald eagles. As described above, noise from train operations is expected to attenuate to background noise levels within 100 feet of the proposed rail spur. The retained bald eagle nest and proposed nest platforms would be at least 400 feet away from the rail spur, and are not anticipated to be significantly affected by noise from project operations.

Operation of the proposed project may also affect behavior of great blue herons at the March Point Heronry, particularly light pollution. However, lights in the proposed facility would be shielded and directed downward. The photometric analysis conducted by Shell (Shell Oil Products U.S. 2014) shows that light from the nearest facility fixture to the March Point Heronry would dissipate to zero approximately 50 feet from the source. Therefore, impacts to herons from additional light pollution are expected to be negligible; any additional light impacts generated from the project would be over 1,950 feet from the nearest corner of the March Point Heronry.

Noise from operation of six trains per week, on average, has the potential to affect heron behavior at the March Point Heronry. The loudest operational noise anticipated to be generated near the heronry would come from train horn blasts at the at-grade crossing at **East March's Point Road**.



The FRA requires the sounding of locomotive horns at public highway rail grade crossings, starting 0.25 mile from each at-grade crossing. Using WSDOT (2015) linear noise attenuation calculations, train horn blasts would attenuate to background noise levels in the vicinity of the heronry approximately 2,700 feet from the track. Herons may detect the horn blasts in the colony, which at its closest point is 700 feet away from the rail line. Although train horn blasts would be detectable by herons in the colony, the heronry is already surrounded by industrial and transportation development and herons can detect horn blast noise from existing train traffic. Regardless, the colony has demonstrated tolerance to existing noise from up to two trains per day as evidenced by the sustained productivity of the colony.

During heron breeding and rearing season (February to September) Azezerrad (2012) recommends a seasonal buffer to minimize noise disturbance activities that generate sound exceeding 92 dBA when the sound reaches the outer boundary of the nesting colony. Train horn blasts would attenuate to 92 dBA approximately 400 feet from the rail line, which would not reach the outer boundary of the colony located approximately 700 feet from the rail line. Thus noise levels that may be disruptive to breeding herons would not reach the colony during the breeding and rearing season. Operational impacts are anticipated to be insignificant to great blue herons because additional horn blasts would not result in injury, death, or harassment of wildlife that would adversely affect the population viability of this species.

Indirect Impacts

Operation of the proposed project may result in habitat degradation from stormwater discharges, alterations in stream hydrology, and air emissions causing indirect impacts to wildlife. Also, the introduction of exotic plants can degrade habitats (Jackson 2000). Loss of habitat for species that use these areas for breeding may also result in reduced breeding activity. Indirect impacts from new barriers to wildlife movement may include local population declines or, at worst, local extirpation due to predators or natural causes; smaller populations may also be more susceptible to inbreeding and to genetic defects (FHWA 2010; Jackson 2000).

Wetland Mitigation Site

Direct Impacts to Vegetation

Construction

Construction of the mitigation features would require removal of vegetation at the wetland mitigation site. Table 3.6-12 identifies the areas of permanent clearing by vegetation community.

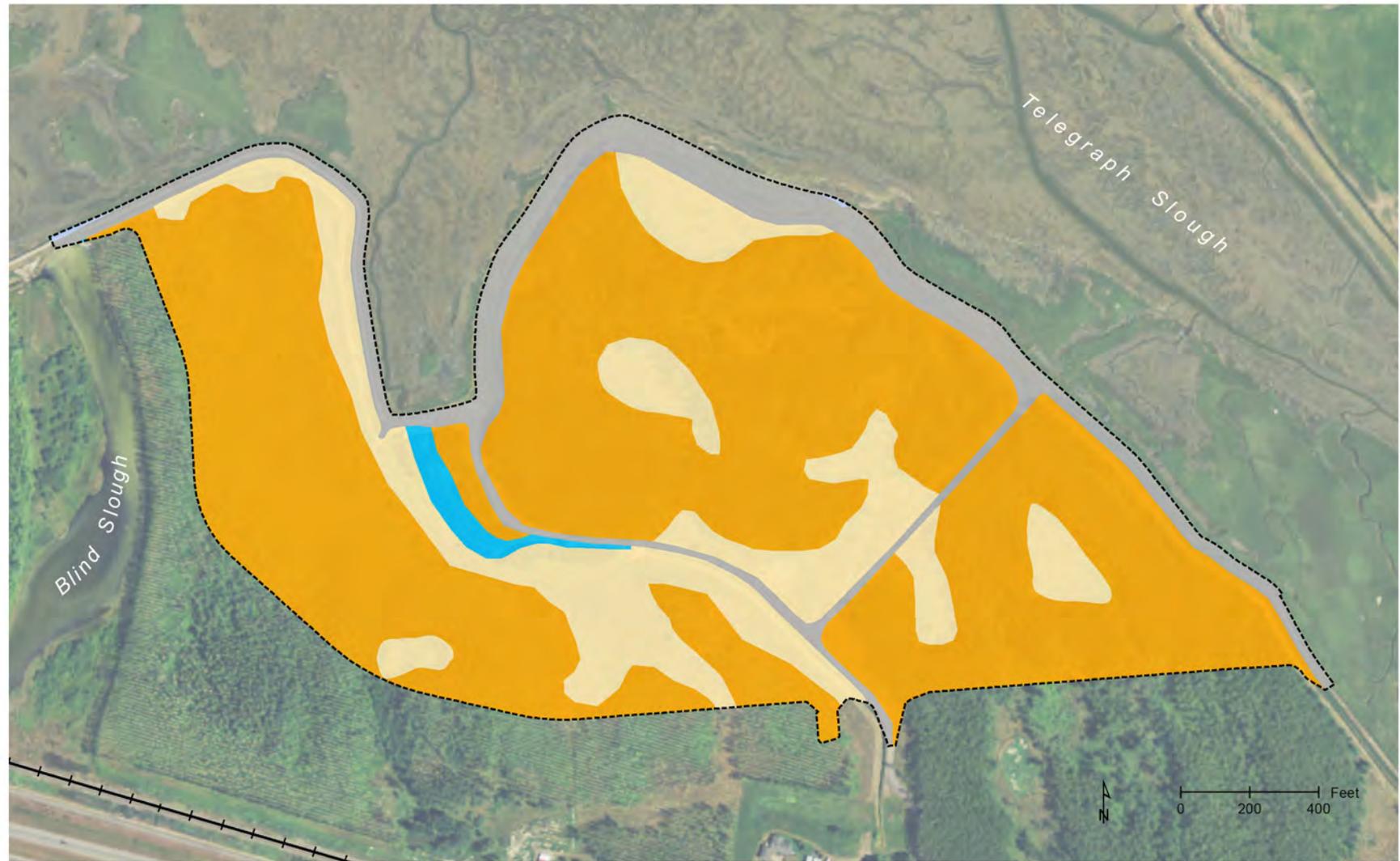


Table 3.6-12 Vegetation Disturbance Areas Associated – Wetland Mitigation Site

Vegetation Community/ Land Cover Type	Permanent Impacts (approximate acres)
Herbaceous wetlands	16.8
Westside riparian-wetland	58.8
Lakes, rivers, ponds, and reservoirs	1.0
Marine nearshore	0.1
TOTAL	76.7

A total of 76.7 acres of forested, scrub-shrub, and emergent wetland vegetation, as well as the East Slough, would be permanently cleared and regraded, and the dikes would be breached. The proposed wetland mitigation would reestablish nearshore ecosystem processes that are anticipated to develop into nearshore habitats over time (mudflats, salt marshes, tidal channels, and upland transition zones) (AECOM 2016b). Figure 3.6-6 illustrates the impacts to vegetation communities at the wetland mitigation site. If the mitigation site successfully establishes nearshore ecosystem processes, suitable habitat for native estuarine vegetation would persist in perpetuity, allowing native vegetation communities to increase in species abundance and resilience over time.





DATA SOURCE: (AECOM 2016, HDR 2016, NAIP 2013, NWHI 1999, WSDOT 2015)

- Proposed Wetland Mitigation Site
- Marine Nearshore: Permanent
- Anacortes Subdivision
- Herbaceous Wetlands: Permanent
- Urban and Mixed Environs: Permanent
- Lakes, Rivers, Ponds, and Reservoirs: Permanent
- Westside Riparian-Wetlands: Permanent

Figure 3.6-6
IMPACTS TO VEGETATION COMMUNITIES –
PROPOSED WETLAND MITIGATION SITE



Operation

Operation and maintenance would be designed to meet the goals and objectives of the wetland mitigation site, which are to restore nearshore habitats and establish upland vegetation on the new setback dike. After grading is completed, disturbed areas would be revegetated with native species. The site would be monitored for plant species cover and vigor, species diversity, and invasive species. Therefore, if successful, beneficial impacts associated with the operation of the wetland mitigation site would be significant because the site would increase the extent, connectivity, and integrity of native vegetation communities and land cover in the watershed.

Direct Impacts to Wildlife

Construction

Construction of the proposed mitigation site would permanently remove the active bald eagle nest discovered on the site this year. Shell would mitigate for this loss through design and development of two new bald eagle nesting platforms, which are expected to maintain or increase overall nesting opportunities on the project site. No significant impacts to other special-status species are anticipated as there is no breeding or other core habitat for any other species on the mitigation site. Special-status species such as herons that may forage on the site would be able to avoid the area during construction.

Construction impacts to nonsensitive wildlife species are anticipated to be similar to the proposed project site. These impacts are not expected to be significant. Although activities would likely result in individual animal mortality and permanent loss of deciduous forest habitat used by certain species for breeding, the impacts are not expected to adversely affect the overall viability of local populations of nonsensitive wildlife species.

Operation

Following construction of the wetland mitigation site, beneficial impacts associated with its operation could be significant for species dependent on nearshore habitats for life history stages, such as shorebirds and waterfowl.

Indirect Impacts

Over time, the wetland mitigation site is anticipated to reestablish nearshore habitat that could be used by bird species found in Padilla Bay. Some bald eagle perch trees would be lost and there may be temporary disturbance to nearshore habitat used by herons for foraging. However, successful implementation of the mitigation plan would increase food sources for both species in perpetuity because nearshore habitat and access for fish and aquatic species that eagles and herons prey upon would be re-established. Therefore, an overall net beneficial impact to wildlife is anticipated with construction and operation of the proposed project.



Anacortes Subdivision

Direct Impacts to Vegetation

The proposed project would add, on average, six one-way train trips per week to the Anacortes Subdivision. Currently approximately two BNSF Railway trains travel daily on the Anacortes Subdivision to serve the Shell PSR, Tesoro Anacortes Refinery, and other neighboring industries.

There would be no change to ongoing vegetation maintenance along the rail line; therefore, the additional trains are not expected to affect vegetation. Unit trains entering the Shell PSR would be unlikely to contribute substantially to the dispersal of noxious weeds because they would not carry freight that could be a source for invasive plant species. Potential impacts from an accidental oil spill or explosion are addressed in Chapter 4 – Environmental Health and Risk.

Direct Impacts to Wildlife

The proposed project would add, on average, six one-way train trips per week to the Anacortes Subdivision rail line. Currently, four freight trains of varying types and lengths operate on an average day, in both directions, on the Anacortes Subdivision to serve the Shell PSR, Tesoro Anacortes Refinery, and other neighboring industries. The proposed addition of six trains per week would travel at speeds consistent with existing trains traveling on the Anacortes Subdivision.

Wildlife-train collisions are the most common cause of wildlife mortality along railways (Dorsey et al. 2015). Wildlife-train collisions are more common where higher quality wildlife habitat adjoins or intersects railways, or where moderate train traffic occurs (Dorsey et al. 2015). Slower-moving animal species that are unable to flee oncoming trains are more likely to be struck by trains. Carrion on the railway may attract scavenging mammals and birds that could subsequently be killed by a train strike.

The proposed additional trains have the potential to contribute a minor increase in wildlife-train collisions along the Anacortes Subdivision; however, the impacts are not likely to be significant. The developed landscape surrounding the rail line precludes the presence of higher quality habitat that may be used by wildlife. In addition, most of the rail line is not obscured by dense vegetation, which means that wildlife should be able to detect and evade oncoming trains. Noise from train operations on the Anacortes Subdivision is anticipated to have similar general impacts to wildlife as those described for the proposed project site. Shorebirds foraging in areas immediately adjoining the Swinomish Channel swing bridge may temporarily avoid the area during train operations, but the impact is anticipated to be negligible with no long-term avoidance or abandonment of nearshore habitat.

Cumulative Impacts

As described above, construction and operation of the proposed project could result in impacts to vegetation and terrestrial wildlife. Within the study area, there has been significant agricultural, industrial, commercial, and residential development. It is assumed that with this growth and construction, vegetation and terrestrial wildlife resources have been affected



The Tesoro Clean Products Upgrade Project (Tesoro 2015) (see Table 3.0-2 in Chapter 3.0 – Introduction, for additional project details) is anticipated to have minimal impacts on vegetation and terrestrial wildlife as the project would be constructed within a previously developed area of the refinery. The proposed project, and to a minimal extent, the Tesoro project, could contribute to a cumulative impact on vegetation and terrestrial wildlife. These impacts would be minimized by construction BMPs and localized to the Tesoro Anacortes Refinery site and the proposed project and mitigation sites.

MITIGATION MEASURES

Avoidance and Minimization

Shell has incorporated engineering and operational measures into the design of the proposed project to avoid and minimize vegetation and terrestrial wildlife impacts including:

- The North Stormwater Pond would be located away from the mid-peninsula eagle nest that would be retained.
- Most of the fish-accessible mid-to-lower reaches of Stream S, which parallels the existing BNSF Railway tracks, would be avoided. All of the wooded riparian area and the salt marsh portion of a Wetland I1 adjacent to Stream S would be avoided.
- Retaining walls would be used rather than sloped sides for the bridge on 4th Street to span the tracks to minimize permanent wetland impacts.
- Although not statutorily required, the lights at the proposed facility would be shielded and directed downward to minimize light pollution that could affect wildlife.
- Shell would restrict asphalt cutting near Padilla Bay to occur during low tides (5-foot tidal elevation or less) to reduce noise disturbance in potential marbled murrelet foraging habitat.

In addition, impacts to vegetation and terrestrial wildlife would be minimized by the implementation of the BMPs required as part of the NPDES Construction Stormwater Permit, CWA Section 404 Individual Permit, CWA Section 401 Water Quality Certification, Hydraulic Project Approval, Skagit County Grading Permit, and Shoreline Substantial Development Permit. For example, BMPs could include confining construction activities to daylight hours to minimize potential light and noise impacts to wildlife, implementing stormwater and erosion control BMPs, and restoring all temporarily disturbed areas with native vegetation appropriate to site conditions.



Mitigation

Construction of the proposed project would permanently remove two active bald eagle nests: one near the Anacortes Subdivision in the southern portion of the proposed project site, and a second found within the wetland mitigation site. In accordance with the conditions of the USFWS bald eagle take permit, Shell would mitigate for the loss of the bald eagle nests through design and development of two new bald eagle nesting platforms at least 400 feet from the new rail unloading facility, and two new bald eagle nesting platforms within the wetland mitigation site. These platforms are expected to maintain or increase overall nesting opportunities on the project site and wetland mitigation site. One existing bald eagle nest on the project site would be retained. Per the permit conditions, Shell would monitor the nest for eagle use during critical months and report activity to USFWS.



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