

3.5 WETLANDS

This section discusses existing wetland conditions, addresses potential impacts on wetlands associated with the proposed project, and identifies mitigation measures designed to limit those impacts. The wetland analysis in this section is based primarily on information found in the following technical reports: *Revised Wetland Delineation Report: BP Cherry Point Cogeneration Project* (BP 2002, Appendix H); *Revised Cogeneration Project Compensatory Mitigation Plan* (Appendix E); *Revised Cogeneration Project Compensatory Mitigation Areas Wetland Delineation Report BP Cherry Point* (Appendix E); and the *May 22, 2003 Addendum: Changes to Revised Cogeneration Project Compensatory Mitigation Plan* (Appendix E). The analysis of wetlands associated with the transmission lines is based on information from several technical reports including the *Environmental Resources Report: BPA Transmission Line Brown Road to Custer Substation* (Appendix B). Wetland delineations were not performed as part of the analysis of this last report. Wetland determinations were made during a reconnaissance-level investigation of the transmission line corridor. Wetlands were rated using Ecology's Wetland Rating System (Ecology 1993). Additional reports include the *Wetland Report for Arco Products Company: Proposed Cherry Point Refinery Distribution Lines, ROW Towers, and Substation* (Radian International and Dames and Moore 1999) and the *Wetland Compensatory Mitigation Plan for BPA/PUD Transmission Line Project: JARPA Application and SEPA checklist* (Arco Products Company 1999). Where additional sources of information have been used to evaluate the potential impacts associated with the proposed project, those sources have been cited.

3.5.1 Existing Conditions

Several wetland communities have been identified in the project vicinity. Wetland systems near or within the project site have been delineated wholly or partially and are shown in Figure 3.5-1. Three wetlands—Wetlands E, I, and K—were evaluated as part of the technical reports prepared for the project, but are located outside the footprint of the proposed project site and would not be disturbed under the proposed project (Figure 3.5-1). According to the U.S. Fish and Wildlife Service wetland classification system (Cowardin et al. 1979), most of the wetlands in the project vicinity are considered palustrine emergent (PEM), although some palustrine scrub-shrub (PSS) and palustrine forested (PFO) wetlands also are present. All of the wetlands associated with the project were rated as Category III wetlands based on Ecology's *Washington State Wetlands Rating System for Western Washington* (Ecology 1993). Before the Applicant acquired the property more than 30 years ago, wetland areas in the project site were associated with agricultural uses. The extent, types, and rating of wetlands within the various portions of the project site are identified in Tables 3.5-1, 3.5-3, and 3.5-4. Plant species observed in the proposed project area are presented in Table 3.5-2.

Table 3.5-1: Summary of Wetland Systems and Impact Areas Associated with the Cogeneration Facility, Refinery Interface, and the Transmission System (acres)

Location	Wetland	Classification ¹	Wetland Rating ²	Wetland Size	Impact Area
Cogeneration Facility	A	PEM/PFO	III	1.69	1.69
Cogeneration Facility	B1	PEM	III	0.14	0.14
Cogeneration Facility	B2	PEM	III	1.94	1.94
Cogeneration Facility ³	B3	PEM	III	1.31	1.31
Cogeneration Facility	C	PEM	III	4.25	0.88
Cogeneration Facility ⁴	D	PEM	III	39.33 ⁵	5.92
Refinery Interface (Laydown Area 2)	F	PEM/PSS	III	13.41	13.41
Refinery Interface (Laydown Area 3)	G	PEM	III	5.46	5.46
Refinery Interface (Access Road 2)	H	PEM	III	8.0 ⁶	0.23
Refinery Interface (Laydown Area 1)	J	PEM	III	4.39	4.39

1 Based on U.S. Fish and Wildlife Service wetland classification system (Cowardin et al. 1979).

2 Based on Ecology Wetland Rating System (Ecology 1993).

3 A small portion of Wetland B3 is within Laydown Area 4.

4 Wetland D is also located within the transmission system corridor and the footprint of Access Road 3.

5 Actually larger; extends unknown distance offsite.

6 Size estimated; extends offsite.

Table 3.5-2: Plant Species Observed in the Project Vicinity

Scientific Name	Common Name
Trees	
<i>Abies amabilis</i>	Pacific silver fir
<i>Acer circinatum</i>	vine maple
<i>Alnus rubra</i>	red alder
<i>Betula papyrifera</i>	paper birch
<i>Chamaecyparis nootkatensis</i>	Alaska cedar
<i>Crataegus</i> spp.	hawthorn
<i>Populus x generosa</i> ¹	hybrid poplar
<i>Populus tremuloides</i>	quaking aspen
<i>Populus trichocarpa</i>	black cottonwood
<i>Pseudotsuga menziesii</i>	Douglas-fir
<i>Thuja plicata</i>	western red cedar
Shrubs	
<i>Cornus servicea</i>	red-osier dogwood
<i>Holodiscus discolor</i>	oceanspray
<i>Lonicera involucrata</i>	twinberry
<i>Oemleria cerasiformis</i>	Indian plum
<i>Oplopanax horridus</i>	Devil's club
<i>Rosa pisocarpa</i>	wild rose
<i>Rubus laciniatus</i>	evergreen blackberry
<i>Rubus procerus</i>	Himalayan blackberry
<i>Rubus spectabilis</i>	salmonberry
<i>Salix lucida</i> var. <i>lasiandra</i>	Pacific willow
<i>Salix scouleriana</i>	Scouler's willow
<i>Salix sitchensis</i>	Sitka willow
<i>Sambucus racemosa</i>	red elderberry
<i>Spiraea douglasii</i>	spirea
<i>Symphoricarpos albus</i>	snowberry

1 Specific hybrid not confirmed.

Table 3.5-2: Continued

Scientific Name	Common Name
Herbaceous	
<i>Agropyron repens</i>	quackgrass
<i>Agrostis alba</i>	red top
<i>Agrostis tenuis</i>	colonial bentgrass
<i>Alopecurus pratensis</i>	meadow foxtail
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Carex obnupta</i>	slough sedge
<i>Cirsium arvense</i>	Canada thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Dactylis glomerata</i>	orchard grass
<i>Dicentra formosa</i>	bleeding heart
<i>Eleocharis acicularis</i>	least spikerush
<i>Elymus canadensis</i>	rye grass
<i>Equisetum telmateia</i>	giant horsetail
<i>Festuca arundinacea</i>	tall fescue
<i>Holcus lanatus</i>	velvet grass
<i>Hypochaeris glabra</i>	cat's ear
<i>Iris missouriensis</i>	iris
<i>Juncus balticus</i>	Baltic rush
<i>Juncus effusus</i>	soft rush
<i>Lotus corniculatus</i>	bird's foot trefoil
<i>Phalaris arundinacea</i>	reed canarygrass
<i>Plantago lanceolata</i>	English plantain
<i>Plantago major</i>	common plantain
<i>Poa pratensis</i>	bluegrass
<i>Poa trivialis</i>	rough bluegrass
<i>Polygonum persicaria</i>	lady's thumb
<i>Polystichum munitum</i>	sword fern
<i>Ranunculus repens</i>	creeping buttercup
<i>Rumex crispus</i>	curly dock
<i>Scirpus acutus</i>	hardstem bulrush
<i>Solanum dulcamara</i>	bittersweet nightshade
<i>Stellaria media</i>	chickweed
<i>Taraxacum officinale</i>	dandelion
<i>Tolmiea menziesii</i>	piggy-back plant
<i>Trifolium pratense</i>	red clover
<i>Urtica dioica</i>	stinging nettle
<i>Vicia hirsuta</i>	tiny vetch

Source: BP 2002, Section 3.4

Cogeneration Facility

Wetlands associated with the cogeneration facility are primarily PEM systems (Figures 3.5-1 and 3.5-2). Some PFO wetland habitat is associated with Wetland A.

Wetland A is a 1.69-acre PEM and PFO wetland system located in the northwest corner of the cogeneration facility site. Forested vegetation associated with Wetland A is part of a hybrid poplar plantation. Emergent vegetation species are dominated by creeping buttercup, bentgrass, and bluegrass.

Wetlands B1, B2, and B3 are PEM wetland systems located north of the main east-west drainage ditch within the cogeneration facility footprint. A small portion of Wetland B3 is within Laydown Area 4. Dominant vegetation species within these wetlands include rough bluegrass, velvet grass, bull thistle, tall fescue, Baltic rush, spike rush, and meadow foxtail.

Wetland C is a 4.25-acre PEM wetland system located within the eastern portion of the cogeneration facility. Dominant vegetation species within Wetland C include creeping buttercup, rough bluegrass, velvet grass, Baltic rush, and meadow foxtail.

Wetland D is a PEM wetland system located within the southern portion of the cogeneration facility. The total delineated area of Wetland D was 39.33 acres. Not all of Wetland D was delineated because the system extends east and south of the cogeneration facility. Reed canarygrass is the most prominent species in Wetland D. Additional species present in scattered locations within Wetland D include sweet vernal grass, Kentucky bluegrass, soft rush, slough sedge, colonial bentgrass, bird's foot trefoil, giant horsetail, and Canada thistle.

Thickets of Himalayan blackberry are the dominant wetland buffer vegetation of wetland systems associated with the cogeneration facility. Upland hummocks of Canada thistle and Himalayan blackberry occur within these wetland systems as well. The buffer area of Wetland C also includes patches of immature Douglas fir and stands of hybrid poplar.

Refinery Interface

Wetlands associated with components of the refinery interface (Laydown Areas 1, 2, and 3, and Access Road 2) are primarily PEM systems (Figures 3.5-1 and 3.5-2). Wetland F also includes several small patches of PSS wetland habitat.

Wetland F is a 13.41-acre PEM and PSS wetland system located within construction Laydown Area 2. Emergent vegetation is dominated by colonial bentgrass, meadow foxtail, velvet grass, and soft rush. Scrub-shrub vegetation associated with Wetland F occurs in several small patches of Pacific willow and Scouler's willow in the northwestern portion of the wetland. Each of these patches contains approximately three to five shrubs with an understory of soft rush.

Wetland F also includes an approximately 0.6-acre area of immature hybrid poplar (average dbh of 2 to 3 inches) in the northwest portion of the wetland.

Wetland G is a 5.46-acre, isolated PEM wetland system located within construction Laydown Area 3. Reed canarygrass is the dominant vegetation species within Wetland G. Subdominant species include meadow foxtail, velvet grass, and colonial bentgrass. English plantain, bull thistle, and Canadian thistle were also documented.

Figure 3.5-1

Figure 3.5-2

Wetland J is a 4.39-acre, isolated PEM wetland system located within construction Laydown Area 1. Reed canarygrass is the dominant vegetation species within Wetland J, often consisting of monotypic stands. Subdominant species include meadow foxtail, red top, and colonial bentgrass.

Wetland H is a PEM wetland system in the location of Access Road 2. Blaine Road separates Wetland H from Wetland G. The total area of Wetland H is estimated to be approximately 8 acres. The estimated impact area of Wetland H associated with Access Road 2, approximately 0.23 acre, was delineated. A complete delineation of Wetland H was not performed because approximately 10 inches of snow covered the ground at the time of the January 2002 site visit. Vegetation species within Wetland H are similar to that described above for Wetland G. Wetland buffers within the components of the refinery interface include parking lots, paved and unpaved roads, and upland grassland areas. The buffer area of Wetland F also includes a small patch of Douglas fir, about 10 to 15 feet tall.

Transmission System

Wetland D is located within a portion of the transmission system corridor. Wetland D, a PEM wetland system, is described above in the cogeneration facility discussion. Federal permits associated with the transmission system corridor have been previously approved (Arco Products Company 1999). Information from those permits, a JARPA application and SEPA checklist, identify PEM, PSS, and PFO wetland systems within the corridor. Wetland vegetation within the PEM, PSS, and PFO wetlands within the transmission system corridor was consistent with what was described for the cogeneration facility and refinery interface site.

Custer/Intalco Transmission Line No. 2

Several wetlands are located within the existing right-of-way of the transmission line corridor (Appendix B). Wetland delineations were not performed within the transmission line corridor. Wetland determinations were made during a reconnaissance-level investigation. Based on the investigation, wetlands were rated using Ecology's Wetland Rating System (Ecology 1993). Wetland delineations would need to be performed where impacts are proposed before wetland permits could be issued.

Wetlands within the transmission line corridor are primarily PEM systems. Wetland vegetation within these PEM wetlands was consistent with that described for the cogeneration facility and refinery interface site. The majority of these PEM wetlands are disturbed due to regular mowing and livestock grazing. Some PSS and one PFO wetland system were also identified. Vegetation within the PSS and PFO wetlands include spirea, salmonberry, red-osier dogwood, willow, paper birch, and red alder (*Alnus rubra*). In most areas, trees growing in the PSS and PFO wetlands are removed or topped by Bonneville to maintain a safe distance between the trees and the electrical lines, typically about 25 feet.

Wetlands associated with the transmission line corridor are summarized in Table 3.5-3. The table identifies wetlands within each 1-mile segment of the approximately 5-mile transmission line corridor from west to east, as well as wetland classifications and the span of each wetland in linear feet within and parallel to the transmission line corridor.

Table 3.5-3: Summary of Wetland Systems Associated with the Custer/Intalco Transmission No. 2 Line Corridor

Study Area Mile	Wetland System Classification	Approximate Length in Corridor (feet)
Mile 1	PEM/PSS	1,200
	PEM	100
	PEM	250
	PEM	125
	PEM/PSS	375
	PEM	300
	PEM	250
	PEM	75
	Mile 2	PEM
PEM		30
PEM		40
PEM		50
PEM		130
PEM		60
PEM/PSS/PFO		375
PEM		200
Mile 3	PEM	50
	PEM	60
	PEM	500
	PEM	30
Mile 4	PEM	125
	PEM	375
	PEM	375
	PEM	40
	PEM	500
	PEM/PSS	150
	PEM	40
Mile 5	PEM	300
	PEM	180
	PEM	600
	PEM	60
	PEM	300
	PEM	60
	PEM	850

Source: Appendix B

Other Project Components

A small portion of Wetland B3 is within Laydown Area 4. Access Road 3 is partially located within Wetland D. Wetlands B3 and D, which are PEM wetland systems, are described above in the cogeneration facility discussion.

Two mitigation sites have been identified immediately north of the cogeneration facility and refinery interface site (Figure 3.5-3). The mitigation sites have been designated CMA 1 and 2. CMA 1 is 50.3 acres and CMA 2 is 59.8 acres (Table 3.5-4). According to the U.S. Fish and Wildlife Service wetland classification system (Cowardin et al. 1979), wetland communities in the proposed mitigation sites are considered temporarily flooded palustrine emergent (PEMA), seasonally flooded palustrine emergent (PEMC), seasonally flooded palustrine forested (PFOC), and temporarily flooded palustrine scrub-scrub (PSSA). Of the 50.3 acres of CMA 1, 38.3 acres includes wetland systems and 12 acres is upland habitat (Table 3.5-4). Of the 59.8 acres of CMA 2, 42.35 acres includes wetland systems and 18.4 acres is upland habitat (Table 3.5-4). Emergent wetlands associated with CMA 1 and CMA 2 are large systems that extend outside the boundaries of the proposed mitigation areas. Wetland systems associated with CMA 1 and 2 are in a degraded condition due to historical agricultural practices.

CMA 1 is composed primarily of emergent vegetation with scattered upland patches. Vegetation species include reed canarygrass (often consisting of monotypic stands), soft rush, velvet grass, bentgrass, and creeping buttercup. A small area of PFOC wetland in the center of the parcel is dominated by a dense grove of quaking aspen. Wetland communities cover about 76% of CMA 1. Much of this area is actively grazed.

Table 3.5-4: Summary of Wetland Systems and Upland Areas Associated with the Proposed Wetland Mitigation Area (acres)

Location	Wetland Classification ¹	Wetland Rating ²	Size	% of Site
CMA 1	PEMA	II	25.8	51%
CMA 1	PEMC	II	12.2	24%
CMA 1	PFOC	II	0.3	1%
CMA 1 Wetland Total	-	-	38.3	76%
CMA 1	Upland	-	12.0	24%
CMA 1 Total	-	-	50.3	100%
CMA 2	PEMA	II	29.7	50%
CMA 2	PEMC	II	11.6	19%
CMA 2	PSSA	II	0.27	1%
CMA 2 Wetland Total	-	-	41.56	69%
CMA 2	Upland	-	18.42	31%
CMA 2 Total	-	-	59.8	100%

1 Based on U.S. Fish and Wildlife Service wetland classification system (Cowardin et al. 1979).

2 Based on Ecology Wetland Rating System (Ecology 1993).

CMA 2 is composed primarily of emergent vegetation with scattered upland patches. Vegetation includes reed canarygrass (often consisting of monotypic stands), soft rush, velvet grass, bentgrass, and tall fescue. Spirea and willow dominate a small patch of PSSA wetland in the northeastern portion of CMA 2. Wetland communities cover about 70% of CMA 2.

Figure 3.5-3

Wetland Functions and Values Assessment

A wetland functions and values assessment was conducted for all of the wetlands associated with the proposed cogeneration project, refinery interface, and mitigation areas (BP 2002, Section 3.4, and BP 2002, Appendix H3). The functions and values assessment was based on Ecology's *Methods for Assessing Wetland Functions* (Ecology 1999). A numerical index of 0 to 10 (0 is very poor and 10 is very high) represents the potential level of performance for each assessed function. Overall, wetland functions and values were rated as low, due primarily to historical degradation from agricultural practices and the dominance of non-native vegetation species within the wetland systems. The majority of the parameters in the functions and values assessment for each of the evaluated wetlands received a value of 4 or less.

3.5.2 Impacts of the Proposed Action

This section describes potential impacts to wetlands from construction activities and project design elements proposed by the Applicant to minimize or compensate for those potential impacts. Potential impacts and design elements applicable to all project components are discussed first, followed by discussions specific to individual project components.

Construction

The permanent fill of wetlands and their buffer areas would be the primary impact associated with construction of the proposed project. Some wetlands would be cleared, graded, and filled for construction. Wetland buffers would also be affected. Implementation of BMPs and mitigation measures presented below would protect surface water features from the introduction of sediments or contaminants during construction.

Wetland functions that would be reduced as a result of construction include floodwater detention and retention, flood flow desynchronization, groundwater recharge and discharge, and water quality improvement. Vegetated wetland and adjacent upland areas that currently allow infiltration of rainwater would be replaced by impervious surfaces. Increases in impervious surfaces could change hydrologic functions in the wetlands. Based on the functions and values assessment prepared for the project, wetlands within the project site are functioning at a low level. Additional discussion of stormwater and water quality issues is included in Section 3.4, Water Quality.

Impacts on wetlands associated with the proposed project have been avoided and minimized to the extent practicable. Zoning regulations, as defined in Section 20 of the Whatcom County Municipal Code, require minimum setbacks from public roads associated with heavy industrial development. The proposed project site was located as close to Grandview Road as possible (250 feet) to avoid wetlands south of the project site, under these setback requirements.

Temporarily disturbed wetland areas would be restored to support native wetland communities. Permanent impacts to wetlands would be compensated by rehabilitating approximately 110 acres of nearby lands that currently consist mainly of degraded wetland systems. Proposed wetland restoration and compensatory mitigation would establish wetland and wetland buffer communities that perform wetland functions at moderate to high levels. In addition, proposed topographic and hydrologic modifications would restore historic drainage patterns.

Under the proposed project, 35.52 acres of Category III wetlands associated with the cogeneration facility, the refinery interface area, and the 0.8-mile transmission system would be temporarily or permanently disturbed (Table 3.5-5).

Table 3.5-5: Summary of Wetland Community Impact Areas Associated with the Cogeneration Facility, Refinery Interface Site, and the Transmission System (acres)

Location	Wetland	Temporary Impact Area	Permanent Impact Area
Cogeneration Facility	A	0.00	1.69
Cogeneration Facility	B1	0.00	0.14
Cogeneration Facility	B2	0.00	1.94
Cogeneration Facility	B3 ¹	0.20	1.11
Cogeneration Facility	C	0.00	0.88
Cogeneration Facility	D ²	0.00	5.92 ³
Cogeneration Facility Total	-	0.20	11.68
Refinery Interface (Laydown Area 2)	F	4.66	8.75
Refinery Interface (Laydown Area 3)	G	0.00	5.46
Refinery Interface (Laydown Area 1)	J	0.00	4.39
Refinery Interface (Access Road 2)	H	0.00	0.23
Refinery Interface Total	-	4.66	18.83
Transmission System	-	0.00	0.15 ⁴
Total Wetland Impacts	-	4.86	30.66

1 A small portion of Wetland B3 is within Laydown Area 4.

2 Wetland D is also located within the transmission system corridor and the footprint of Access Road 3.

3 Includes impacts associated with Access Road 3.

4 Wetland impacts associated with the transmission system have been permitted by the Corps under previous permits.

Cogeneration Facility

Construction activity associated with the cogeneration facility would result in the permanent fill or disturbance of 11.88 acres of PEM Category III wetlands. Of this amount, 11.68 acres would be permanently filled and 0.2 acres would be temporarily disturbed (Table 3.5-5). All of Wetlands B1, B2, and B3 would be cleared. While only about a third of Wetland A would be cleared, construction of the project would hydrologically isolate Wetland A. Therefore, all of Wetland A is considered disturbed as a result of the project. Approximately 0.2 acre of Wetland B3 associated with Laydown Area 4 would be restored after project construction is completed. Portions of Wetland C and D would be cleared. Laydown Area 4 and Access Road 3 are elements of the project included in the category of “other project components.” Impacts to Wetland B3

associated with Laydown Area 4 and to Wetland D associated with Access Road 3 are included in the cogeneration facility discussion and in Table 3.5-5 instead of partitioning impacts to these wetlands between different project components.

Refinery Interface

Construction activity associated with the refinery interface site would disturb approximately 23.49 acres of PEM Category III wetlands. Of this amount, 18.83 acres would be permanently filled and 4.66 acres would be temporarily disturbed. All of Wetlands F, G, and J would be cleared and filled. Approximately 4.66 acres of Wetland F would be temporarily disturbed, but would be restored after project construction is completed. Construction activity associated with Access Road 2 would result in the permanent fill of 0.23 acre of Wetland H. Under the current proposal, Access Road 2 would be wide enough to accommodate the natural gas and water supply pipes associated with the refinery interface. Wetland impacts associated with the elevated piperack have not been quantified at this time. Construction of the elevated piperack would include some minor additional temporary wetland impacts associated with construction of the footings. Permanent impacts associated with the footings of the elevated piperack would be minor. Construction Laydown Areas 1, 2, and 3 would be maintained as impervious areas after construction is completed to accommodate necessary storing and holding areas associated with operation of the refinery. Construction Laydown Area 4 would be converted to upland buffer with potential for wetland mitigation areas.

Transmission System

This 150-foot-wide, 0.8-mile transmission system corridor would require the construction of 5 towers. Construction activity associated with the transmission system would result in the permanent fill or disturbance of approximately 0.15 acre of PEM Category III wetlands. Wetlands would be cleared during construction of the transmission tower pads. The access road associated with the transmission system corridor has already been constructed under previously approved permits (Arco Products Company 1999). Trees growing in the PSS and PFO wetlands would be removed or topped during construction to maintain a safe distance between the trees and the electrical lines.

Custer/Intalco Transmission Line No. 2

Under Option 1, a RAS would install additional electrical equipment, such as new breakers and wiring, within the Custer and Intalco substations. This option would not require any changes to the existing lines or towers. No new towers would be constructed, but the option would require agreement among the Applicant, Alcoa Intalco Works, and Bonneville. No impacts on wetland systems associated with construction of the transmission line would occur under this option.

Under both Option 2a and Option 2b, a second transmission line would be installed inside the 125-foot right-of-way of the existing transmission line corridor from Custer substation to the transmission system interconnection. Under Option 2a new lattice style towers would be

constructed; under Option 2b new monopole style towers would be constructed. Some foundation work would be required to accommodate the new towers under either Option 2a or 2b. While the number of new towers required for either option has not been determined, more monopole towers than lattice towers would be required to accommodate a new electrical line because monopole towers require a shorter distance between towers. The location and amount of clearing that would be required to construct new towers have not been identified. Wetland systems and associated wetland buffers would be avoided where possible during construction of the transmission line. If wetland impacts cannot be avoided, wetland delineations would need to be performed before wetland impacts can be quantified and wetland permits can be issued.

Other Project Components

A small portion of Wetland B3 is within Laydown Area 4. Access Road 3 is located within Wetland D. Impacts associated with Wetlands B3 and D, PEM wetland systems, are described above in the cogeneration facility discussion and in Table 3.5-5 instead of partitioning impacts to these wetlands between different project components.

Wetland systems associated with CMA 1 and 2 will be enhanced to improve overall wetland functional performance and to convert low quality Category II wetlands dominated by reed canarygrass into high quality Category II wetlands composed of native grass, shrub, and tree species within 25 years. Existing native trees and shrubs within CMA 1 and 2 would not be disturbed. A reed canarygrass control program has been proposed to remove and control this invasive species.

Operation

Other than those communities affected by construction, operation of the project is not expected to affect existing wetland systems associated with the refinery interface, transmission system, Custer/Intalco Transmission Line No. 2, and other project components. A perimeter ditch adjacent to the cogeneration facility on the west side of Wetland C may affect the hydrology of Wetland C because of the ditch's sloped topography. See Section 3.3 for additional details. Operation activities associated with the project would occur within developed roads and surfaces.

3.5.3 Impacts of No Action

Under the No Action Alternative, new facilities would not be constructed at the site. Impacts to wetlands associated with the proposed project would not occur. No impacts or construction would occur that would entail removal or alteration of existing wetland habitat within the proposed project site.

The proposed wetland enhancement and the creation of new wetlands associated with the Proposed Action would not occur. As a result, associated increases in the quality of both wetland and wildlife communities and habitats within the watershed would not take place.

3.5.4 Secondary and Cumulative Impacts

The proposed project site is zoned as Heavy Impact Industrial by Whatcom County, and is located within the Cherry Point Major Industrial Urban Growth Area/Port Industrial Zone as defined in the Whatcom County Comprehensive Plan (BP 2002, Section 3.6). The BP Cherry Point Refinery is located near the proposed project site. A variety of industrial facilities such as Alcoa Intalco Works, an aluminum smelter, and the Conoco-Phillips Refinery are located within a few miles of the proposed project site.

The temporary and permanent disturbance of 35.52 acres of wetland habitat, which would generally be considered of low quality, is unlikely to result in significant adverse cumulative impacts on wetland habitat within the area. Existing wetland habitats within the proposed project site are not unique and do not provide high functional values.

The proposed Georgia Strait Crossing project is anticipated to be constructed concurrently with the proposed project. At this time the County envisions growth and development in the general area. Potential impacts to wetland systems associated with these projects would depend on the quantity and quality of affected wetland systems. The proposed project would not contribute to potential cumulative impacts on wetland communities because proposed mitigation measures would create and enhance wetlands that would provide high functional values to replace disturbed wetlands with low functional values.

Additional development projects anticipated to occur in the project vicinity in future years would contribute to cumulative impacts on wetland habitat. Because of the zoning status, development options are limited to industrial use and would be consistent with zoning requirements and federal, state, and local regulations. The proposed project would not directly cause development or serve as a mechanism to enable it. The extent of cumulative impacts on wetland habitat associated with the proposed project would depend on the location, nature, and scale of future development projects in the general area.

3.5.5 Mitigation Measures

Construction

Mitigation measures consistent with those generally required by the U.S. Army Corps of Engineers and Washington Department of Ecology for Category III wetlands within western Washington would be implemented during construction and operation of the project to protect wetlands that would not be filled. Wetlands adjacent to the project site, such as Wetland I, would be protected using silt fencing and hay bales. The portions of Wetlands A, B, C, and D that

would not be disturbed would also be protected using silt fencing and hay bales. Approximately 4.66 acres of Wetland F and 0.2 acre of Wetland B3 would be temporarily disturbed and would be restored after project construction is completed. Under the proposed mitigation plan, in addition to the 0.2 acre of wetland restoration of Wetland B3, 0.3 acre of wetland creation would occur, for a total of 0.5 acre of wetland restoration and creation in this area of the project site (Appendix E).

To compensate for impacts on Wetlands A, B, C, D, F, G, H, and J, the Applicant has designed a mitigation plan in consultation with state and federal agencies. The proposed mitigation areas are in an area of low-quality wetlands north of Grandview Road that are good candidates for wetland rehabilitation and enhancement. A survey of site conditions, including a delineation of existing wetlands, has been completed to aid development of an appropriate mitigation plan.

The proposed location for the compensatory mitigation areas has a high potential for successful rehabilitation. Current performance of wetland functions is low due to historical degradation from agricultural practices. The Applicant is proposing to significantly improve wetland functional performance by establishing a mosaic of wetland habitats with diverse structure and species composition. This would be accomplished by filling ditches constructed to drain the areas and, in the case of CMA 2, diverting stormwater runoff from the cogeneration project site into the area to enhance wetland hydrology functions. Detailed information associated with proposed mitigation measures is provided in the *Revised Cogeneration Project Compensatory Mitigation Plan* (Appendix E) and the *May 22, 2003 Addendum: Changes to Revised Cogeneration Project Compensatory Mitigation Plan* (Appendix E).

Operation

A monitoring plan and a contingency plan have been prepared to monitor the status of the wetland mitigation areas following construction and to address any issues if wetland mitigation performance standards, such as planted vegetation survival and areal cover, required by agency permits are not fulfilled.

3.5.6 Significant Unavoidable Adverse Impacts

A total of 30.51 acres would be permanently converted to the cogeneration facility site and laydown areas within the refinery interface area. At this time it is not known if any wetland areas within the Custer/Intalco Transmission Line No. 2 corridor would be permanently affected; it would depend on tower spacing and foundation requirements. The permanent disturbance of 30.51 acres of generally low quality wetland systems would be compensated by the restoration and creation of 110 acres of higher quality wetlands.

An additional 4.86 acres of wetland within Laydown Areas 2 and 4 would be temporarily, but unavoidably, adversely affected. Mitigation for these impacts would entail restoration of wetland habitats following construction of the proposed project.

An additional 0.15 acre within the transmission system corridor would be permanently converted to transmission tower foundation pads and maintenance roads; these unavoidable adverse impacts have already received Clean Water Act Section 404 permit approval from the Corps of Engineers, but they have not been permitted by Whatcom County.