

## **3.6 AGRICULTURAL LAND, CROPS, AND LIVESTOCK**

### **3.6.1 Existing Conditions**

#### **Agricultural Land**

The Natural Resources Conservation Service (NRCS) defines prime agricultural land as “land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, livestock, timber, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and/or labor. Prime farmland does not include land already in or committed to urban development or water storage" (NRCS 2003).

Whatcom County classifies prime agricultural land in five categories based on NRCS soil classification. The categories include:

- Category I – All areas are prime farmland
- Category II – Prime farmland when drained
- Category III – Prime farmland when protected from flooding
- Category IV – Prime farmland when irrigated
- Category V – Prime farmland when drained and protected from flooding

Whatcom County also has designated Agricultural Protection Overlay (APO) soils, APO Protection Areas, and Open Space (Whatcom County 1997, as amended). The purpose of the APO is to promote commercial agriculture and provide a reasonable mix of uses and a variety of land uses that are not inconsistent or incompatible with agricultural activities. Table 3.6-1 identifies components of the project site that include these APO designations. Figure 3.6-1 presents western Whatcom County's designations for APO soils and APO protection areas.

The area around the proposed project site has not been used for agricultural cultivation for approximately 30 years, with the exception of an area of hybrid poplar trees that the Applicant planted in 1989-1991. The existing grassland immediately to the west of the planted poplar trees and east of the Blaine Road right-of-way has not been cultivated since the Applicant purchased the land in the 1960s. Nearby lands are also fallow agricultural fields.

#### Cogeneration Facility

The cogeneration facility footprint is located within the Cherry Point Major Industrial/Port Industrial Urban Growth Area (UGA) and is zoned for industrial land uses. Because this area has been designated for long-term urban development, these lands do not meet the federal definition of prime farmlands protected under the Farmland Protection Policies Act (FPPA).

The Whatcom County Comprehensive Plan (Whatcom County 1997, as amended) indicates that portions within the fenceline of the cogeneration facility contain prime agricultural soils.

Although the comprehensive plan map is not at the scale to clearly identify soil types within the cogeneration facility fenceline, it appears that the cogeneration facility would be located within areas identified as Category I and Category II prime agricultural soils. APO designations within the cogeneration facility footprint are identified in Table 3.6-1 and Figure 3.6-1.

**Table 3.6-1: Whatcom County-Designated APO Soils, APO Protection Areas, and Open Space Areas Mapped within Project Site Components**

Project Element	APO Soils	APO Protection Areas	Open Space
Cogeneration Facility	yes	no	yes
Refinery Interface Area	yes	no	yes
Cogeneration Facility Transmission System	yes	no	yes
Custer/Intalco Transmission Line No. 2	yes, in less than half of corridor	yes, in majority of corridor	yes, in about half of corridor
Other Project Components	yes, in majority of area	no	yes, in majority of area

Source: Whatcom County 1997, as amended

### Refinery Interface

The refinery interface area, located west of the cogeneration facility, is within the Cherry Point Major Industrial/Port Industrial UGA, and is zoned for industrial land uses. The interface area does not meet the federal definition of prime farmlands protected under the FPPA. Portions of the refinery interface area would be located within areas identified as Category I and Category II prime agricultural soils (Whatcom County 1997, as amended). APO designations within the refinery interface area are identified in Table 3.6-1 and Figure 3.6-1.

### Transmission System

The transmission line corridor is located within the Cherry Point Major Industrial/Port Industrial UGA, is zoned for industrial land uses, and does not meet the federal definition of prime farmlands protected under the FPPA. Portions of the transmission line corridor would be located within areas identified as Category I and Category II prime agricultural soils (Whatcom County 1997, as amended). APO designations within the transmission line corridor are identified in Table 3.6-1 and Figure 3.6-1.

### Custer/Intalco Transmission Line No. 2

The western portion of the transmission line corridor that runs north and south is located within the Cherry Point Major Industrial/Port Industrial UGA and is zoned for industrial land uses. Near where the transmission line begins to run east and west, the transmission line corridor is no longer within the UGA. Within the UGA, the transmission line corridor does not meet the federal definition of prime farmlands protected under the FPPA.

Figure 3.6-1

Portions of the transmission line corridor would be located within areas identified as Category I and Category II prime agricultural soils (Whatcom County 1997, as amended). APO designations within the transmission line corridor are identified in Table 3.6-1 and Figure 3.6-1.

### Other Project Components

Other project components (Access Road 3, industrial water supply pipeline, Laydown Area 4, and CMA 1 and CMA 2) are located within the Cherry Point Major Industrial/Port Industrial UGA, are zoned for industrial land uses, and do not meet the federal definition of prime farmlands protected under the FPPA. These other project components would be located within areas identified as Category I and Category II prime agricultural soils (Whatcom County 1997, as amended). APO designations are identified in Table 3.6-1 and Figure 3.6-1.

### **Agricultural Crops**

In 1997, the U.S. Department of Agriculture (USDA) reported 1,228 farms with a cumulative total of 103,600 acres of farmland in Whatcom County (USDA 2000). The number of farms and amount of agricultural cropland have decreased over the past decade. Table 3.6-2 shows crop farms and acreages per crop. Crops are dominated by hay-alfalfa. According to the 1997 Census of Agriculture, Whatcom County ranks sixth in the state and 95th in the country for the value of agricultural crops sold (USDA 1997).

**Table 3.6-2: Crop Cultivation, Number of Farms, Acres Harvested, and Yield for Selected Crops**

Crop	Farms	Acres Planted	Harvested Yield
Wheat	8	626	50,914 bushels
Hay-Alfalfa	658	40,910	146,740 tons
Corn	3	Data unavailable	4,334 bushels
Potatoes	12	1,585	475,550 hundred weight
Strawberries	14	297	2,306,552 pounds
Raspberries	107	5,255	36,500,750 pounds
Other domesticated berries	27	482	2,671,318 pounds
Fruit orchards	58	419	Data unavailable

Source: USDA 2000

In addition to the above crops, tree farming constitutes another agricultural activity in Whatcom County. Excluding state and national forests, some agricultural land in Whatcom County is used for tree farming, including growing Christmas trees and hybrid softwood trees for harvesting as pulpwood. No data are available on the actual number of acres dedicated to tree farming throughout Whatcom County.

## Cogeneration Facility

From 1989 to 1991, the Applicant planted approximately 142 acres of hybrid poplar trees on the BP Cherry Point Refinery property for future harvesting as pulpwood. No records are available to confirm the density of the planting or actual number of trees planted by the Applicant. The Applicant has not actively managed the poplar crop since the original planting.

Visual inspections performed during wetland and wildlife surveys revealed that approximately 30 acres have grown into dense stands in the eastern portion of the planted area, east of the proposed cogeneration facility and close to the railway crossing near Chemco Industries. Tree heights within this area are uniform at approximately 45 to 50 feet high with a diameter at breast height (dbh) ranging from approximately 6 to 10 inches. Most of these trees have straight, uniform trunks.

Planted hybrid poplars within the cogeneration facility fenceline are generally concentrated west of Access Road 1 and east of the Blaine Road right-of-way. They generally exhibit poor growth characteristics and inconsistent spacing. These trees are generally less than 40 feet tall, although they have a similar diameter as those farther east of the proposed cogeneration facility. Several of the trees in this area exhibit split or forked trunks. The density of hybrid poplars in the eastern portion of the cogeneration facility is approximately 4 trees per 100 square feet. Poplars in the western portion, immediately east of Blaine Road, typically occur in patches with a density of 3 trees per 100 square feet.

The Applicant has no plan or schedule to harvest any of the planted hybrid poplars, except for those that may be removed during construction of the facility. Some of the hybrid poplar trees in the northwest area of the proposed cogeneration facility would be left in place as an aesthetic buffer between Grandview Road and the facility.

## Refinery Interface

An approximately 0.6-acre area of immature hybrid poplars (average dbh of 2 to 3 inches) is located within the northwest portion of Wetland F within Laydown Area 2 (Figure 3.5-1).

## Transmission System

The transmission line corridor crosses a narrow band of hybrid poplars that is part of the stands east of the cogeneration facility's footprint.

## Custer/Intalco Transmission Line No. 2

Agricultural crop production has not been identified within the existing transmission line corridor (Appendix B). Some agricultural activity may occur adjacent to the corridor.

### Other Project Components

No agricultural crops are grown within Access Road 3, the industrial water supply pipeline corridor, or CMA 2. North of Grandview Road and east of Blaine Road, in the area of CMA 1, the Applicant leases land to local farmers for hay production. Hybrid poplar stands are located within Laydown Area 4.

### **Livestock**

In 1997, the USDA reported 800 farms with 120,652 total animals in livestock and poultry production in Whatcom County. Table 3.6-3 provides information on specific livestock production in Whatcom County, which is mostly composed of milk cows and chickens. Whatcom County is ranked third in Washington State in the commercial value of livestock and poultry production. There are no fisheries or aquaculture practices in Whatcom County (USDA 2000).

**Table 3.6-3: Livestock Production in Whatcom County**

Livestock Produced	Total Farms	Total Animals
Beef cattle	334	4,748
Milk cows	307	64,162
Hogs and pigs	36	350
Sheep and lambs	40	406
Broilers and other chickens	9	3,127,984

Source: USDA 2000

### Cogeneration Facility

Livestock production has not occurred within the area of the cogeneration facility for at least 30 years since the Applicant has owned the property.

### Refinery Interface

Livestock production has not occurred within the refinery interface area for at least 30 years since the Applicant has owned the property.

### Transmission System

Livestock production has not occurred within the western portion of the transmission line for at least 30 years since the Applicant has owned the property. As recently as 1998, livestock grazing was occurring in the very eastern portion of the transmission line corridor (Arco Products Company 1999).

## Custer/Intalco Transmission Line No. 2

Grassland habitat within the transmission line corridor is disturbed due to mowing and livestock grazing (Appendix B). Information was not available to quantify the amount of livestock activity currently occurring within the existing transmission line corridor. Grazing pastures for livestock within the corridor would be limited by maintenance activities and the variety of paved and unpaved roads that are located within and/or cross the transmission line corridor.

### Other Project Components

North of Grandview Road and east of Blaine Road, the Applicant leases land to local farmers for cattle grazing. The majority of the 50.3-acre wetland compensatory mitigation area, CMA 1, is currently used for cattle grazing by a local dairy farmer under a five-year contract with the Applicant. Livestock production does not occur within the areas for Access Road 3 or Laydown Area 4.

### **3.6.2 Impacts of the Proposed Action**

#### **Construction**

##### Agricultural Land

###### *Cogeneration Facility*

Construction of the cogeneration facility would not affect any prime farmlands because the cogeneration facility site has been designated for long-term urban development and does not meet the definition of prime farmlands protected under the FPPA.

Construction of the cogeneration facility would result in the development or modification of land that Whatcom County has identified as Category I and II prime farmland soils and mapped as APO soils and Open Space (Table 3.6-1).

###### *Refinery Interface*

Construction within the refinery interface area would not affect any prime farmlands protected under FPPA. Construction would, however, result in the development or modification of land that Whatcom County has identified as Category I and II prime farmland soils and mapped as APO soils and Open Space (Table 3.6-1).

###### *Transmission System*

Construction and erection of electrical transmission towers and improvement of the maintenance road within the transmission line corridor would not affect any prime farmlands protected under

FPPA. Construction would result in the development or modification of land that Whatcom County has identified as Category I and II prime farmland soils and mapped as APO soils and Open Space (Table 3.6-1).

### *Custer/Intalco Transmission Line No. 2*

Option 1 - Remedial Action Scheme. Under Option 1, no additional transmission lines or supporting structures would be required for Custer/Intalco Transmission Line No. 2; therefore, there would be no impacts on agricultural land for this project element.

Option 2a - New Transmission Line with Lattice Towers. Under Option 2a, approximately 5 miles of Custer/Intalco Transmission Line No. 2 would be reconstructed between the Custer substation and the new 230-kV transmission system interconnection. The reconstruction would replace the existing single-circuit towers with new double-circuit steel lattice towers and install an additional 230-kV transmission line to be suspended from the new towers.

Approximately 3.5 miles of the transmission line to be reconstructed is located outside the Cherry Point UGA. This portion of the existing transmission corridor encompasses approximately 53 acres of land that is outside the UGA and potentially includes areas of prime farmland as designated by the NRCS under the FPPA. Whatcom County has identified portions of the transmission line corridor that contain Category I and II Prime Farmland soils, APO soils, APO Protection Areas, and designated Agricultural Open Space (see Table 3.6-1).

At this time, Bonneville has not determined the number or location of towers that would be used under this option; therefore, it is not possible to identify and quantify areas of specific impact on prime farmland. In general, construction activities within the transmission corridor would likely affect some areas of NRCS-designated prime farmland and Whatcom County-designated agricultural lands in the 53-acre portion of the corridor located outside the UGA. These impacts would typically consist of relatively small (0.25 acres or less) areas that would be permanently used for the new (or modified) tower sites, and the areas located between the towers that would be temporarily required for installation of the new overhead transmission lines.

Option 2b - New Transmission Line with Monopole Towers. Option 2b would be similar to Option 2a, except that steel monopole towers would be installed instead of steel lattice towers. Because monopole towers use a different foundation design and require a shorter span between towers than lattice towers, new foundations would be required for all towers, and a greater number of towers would need to be installed.

As with Option 2a, Bonneville has not determined the number or location of towers that would be used under this option. General impacts on agricultural land would be similar to those described for Option 2a, except that a greater number of sites within the 53-acre corridor modification area would be permanently used for construction of the towers.

### *Other Project Components*

Construction activities associated with Access Road 3, the industrial water supply pipeline, Laydown Area 4, and CMA 1 and CMA 2, would not affect any prime farmlands. Construction activities would result in the development or modification of land that Whatcom County has identified as Category I and II prime farmland soils and mapped as APO soils and Agricultural Open Space (Table 3.6-1).

### Agricultural Crops

Project construction would result in a direct and permanent loss of approximately 2.6 acres of existing hybrid poplars associated with the cogeneration facility, Access Road 1, and Laydown Areas 2 and 4. Of the 2.6 acres of hybrid poplars that would be cleared, 1.5 acres is associated with upland vegetation communities, 0.6 acre are associated with Wetland F (Laydown Area 2), and approximately 0.4 acre is associated with Wetland A (cogeneration facility).

### *Cogeneration Facility*

As described above in the existing conditions section, hybrid poplars within the cogeneration facility site that would be cleared during construction are generally of poorer quality relative to the stands east of the footprint of the cogeneration facility.

### *Refinery Interface*

An approximately 0.6-acre area of immature hybrid poplars located within the northwest portion of Wetland F, within Laydown Area 2, would be cleared.

### *Transmission System*

The transmission line corridor would cross a narrow band of hybrid poplars that is part of the stand east of the cogeneration facility. Based on the design plan, transmission line tower pads would not be located in the area of the hybrid poplar stand (Arco Products Company 1999). No other agricultural crops are grown within the corridor.

### *Custer/Intalco Transmission Line No. 2*

Agricultural crop production has not been identified within the existing transmission line corridor (Appendix B). Agricultural activity adjacent to the corridor would not be disturbed.

### *Other Project Components*

No agricultural crops would be effected with the construction of Access Road 3, installation of the industrial water supply pipeline, or CMA 2. Land leased to local farmers for hay production

in CMA 1 would be converted to a wetland mitigation site. Hybrid poplars located within Laydown Area 4 would be cleared.

## Livestock

### *Cogeneration Facility*

There would be no impacts to livestock associated with the cogeneration facility. Livestock production does not occur within the area of the cogeneration facility.

### *Refinery Interface*

There would be no impacts to livestock associated with the components of the refinery interface. Livestock production does not occur within the area of refinery interface components.

### *Transmission System*

There would be no impacts to livestock associated with the majority of the transmission line corridor. The very eastern portion of the transmission line corridor traverses grazing pastures for livestock that were active in 1998 (Arco Products Company 1999). Current grazing activity in this portion of the corridor is unknown.

### *Custer/Intalco Transmission Line No. 2*

Construction of transmission line tower pads would occur adjacent to the existing tower pads and “stringing” the new 230-kV transmission line would be done from the existing maintenance roads. Livestock currently graze on the upland vegetation within the existing transmission line corridor. Significant impacts on livestock or on vegetation within the transmission line corridor are not likely since the proposed construction activities would not significantly change habitat conditions within the corridor. A quantitative evaluation of the potential impacts, if any, would require additional information on livestock activity and an assessment of the condition of the vegetation habitats within the transmission corridor.

### *Other Project Components*

The proposed compensatory wetland mitigation plan would preclude the continued use of mitigation area CMA 1 for cattle grazing. It is assumed that the current lessee would be able to lease other suitable grazing land. There would be no impacts to livestock associated with Access Road 3, the industrial water supply pipeline, Laydown Area 4, and CMA 2.

## **Operation**

Air emissions from the proposed cogeneration facility that have the potential to affect agricultural lands, crops, and livestock include primary particulate matter and secondary formation of ammonium nitrate and ammonium sulfate. Air quality impacts resulting from operation of the facility are projected to be below the secondary ambient air quality standards established to protect public welfare. Air emissions from plant operations are addressed in Section 3.2.

Water-cooled condensers will be used for cooling and condensing low-pressure steam from the steam turbine. These condensers will be designed and operated to minimize the potential drift, or water droplet plume, that is typically associated with water-cooling towers. There would be a negligible impact on agricultural crops or livestock from drift emissions. Based on the results of the air dispersion modeling analyses, facility emissions are expected to have a negligible effect on soils and vegetation. Low-sulfur natural gas fuel will be the primary energy source, thus minimizing the emission of sulfur compounds. For emissions of NO<sub>x</sub> (assuming full conversion to NO<sub>2</sub>), potential vegetation damage could begin to occur with NO<sub>2</sub> concentrations of 15 to 50 ppb. However, according to the modeling results, the maximum annual concentration of NO<sub>2</sub> would be below 1.0 μ/m<sup>3</sup> or about 1.1 ppb; no impacts on vegetation are anticipated.

The proposed project would store and use anhydrous ammonia in its emissions control system. Numerous design features would be used, including water deluge systems, to minimize the possibility of an ammonia release and to prevent the transport of any ammonia that is accidentally released. If anhydrous ammonia were released from within the cogeneration facility and transported offsite by winds, it would be in a gaseous state and released in minor amounts over time and would not be expected to adversely affect agricultural crops or livestock.

Operation of the project associated with the refinery interface, cogeneration facility transmission line, Custer/Intalco Transmission Line No. 2, and other project components are not anticipated to affect existing agricultural lands, crops, or livestock.

### **3.6.3 Impacts of No Action**

Under the No Action Alternative, the proposed cogeneration project would not be constructed and operated. Because the area is zoned for industrial uses, it is possible that any future development of the project site would eventually affect some or all of the existing poplar trees on the site. Under the No Action Alternative, existing livestock grazing areas north of Grandview Road and east of Blaine Road would not be affected by the wetland mitigation proposed for the project.

### **3.6.4 Secondary and Cumulative Impacts**

The project site is zoned for industrial uses and is located within the Cherry Point Major Industrial Urban Growth Area/Port Industrial Zone as defined in the Whatcom County Comprehensive Plan. The potential cumulative impacts on agricultural lands and uses have been considered in the comprehensive planning and zoning process. Nevertheless, the conversion of up to 195 acres of land with prime agricultural soils and the harvest of approximately 0.6 acre of planted hybrid poplars would result in a relatively small contribution to any cumulative impact on agricultural land and crops in Whatcom County.

The potential loss of some grazing land north of Grandview Road on BP property would not contribute to a significant cumulative loss of grazing land because this area is incrementally being set aside as conservation easements and mitigation areas. There would be no cumulative loss of livestock associated with the proposed project because remaining pastureland north of Grandview Road beyond CMA 1 could accommodate the cattle currently grazing in this area.

The proposed Georgia Strait Crossing project, as described in Section 3.10, is anticipated to be constructed concurrently with the proposed project. At this time, the County envisions additional growth and development in the area of the proposed project. Impacts associated with these future projects would generally be similar to the type of cumulative impacts on agricultural crops, land, and livestock as described for the proposed project.

### **3.6.5 Mitigation Measures**

#### **Construction**

No construction mitigation measures for agricultural land, crops, and livestock are proposed because there are no anticipated significant impacts on agricultural crops or livestock.

#### **Operation**

No mitigation measures for agricultural land, crops, and livestock are proposed.

### **3.6.6 Significant Unavoidable Adverse Impacts**

No significant unavoidable adverse impacts on agricultural land, crops, or livestock are anticipated. Whatcom County has zoned the project area for industrial land uses and therefore the loss of potential agricultural soils is not considered significant. In addition, no agricultural crops would be lost with the construction and operation of the project, and with the exception of the loss of grazing lands on leased land, no livestock would be adversely affected with the construction and operation of the proposed project.