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## **2.2 Land Use and Transmission**

An understanding of the land involved in the proposed project is essential to the analyses on land use, ecology, and other disciplines in Chapters 4 and 5. Accordingly, this section describes the land characteristics of the proposed VCS, site and vicinity, transmission corridors, offsite areas, and the region. As presented in Subsection 2.5.4, there are no Native American lands within the 50-mile radius. More detailed land use information, as it pertains to socioeconomics, is provided in Section 2.5.

### **2.2.1 The Site and Vicinity**

#### **2.2.1.1 The Site**

Exelon has entered into an agreement to purchase the proposed 11,532-acre site for construction of a nuclear power plant. Exelon will acquire all mineral rights, including all related oil and gas leases, under the power block area. Exelon will acquire a surface waiver from the mineral interest owners and oil and gas lessees for the areas comprising the cooling basin and the exclusion area. For mineral rights and leases outside the exclusion area boundary and cooling basin footprint, Exelon will evaluate the impact on construction and operation of the plant of allowing the current land use to continue. Exelon will acquire such additional mineral rights and leases necessary to assure the safe construction and operation of the plant at the COL stage. There are approximately 100 wells, with approximately 23 active wells, associated with oil and gas exploration/production within the property boundary, including approximately 10 permitted exploration sites as of October 2007. There are currently 3 gas pipelines running through the site owned by Kinder Morgan (successor-in-interest to Natural Gas Pipeline Company of America and Texas Illinois National Gas Pipeline Co.), Williams (successor-in-interest to Transcontinental Gas Pipe Line Corporation) and Gulf South Pipeline Company, LP. These pipelines would be rerouted to the north of the power block to connect to existing pipelines in already disturbed areas.

Based on geographic information system (GIS) and aerial interpretation of the site using U.S. Geological Survey (USGS) land use classifications, most of the site is considered rangeland. [Figure 2.2-1](#) and [Table 2.2-1](#) indicate the land use within the site. The proposed location was chosen to enable functional and safe operation of a nuclear power plant, including support facilities and an onsite cooling basin. The proposed land use is compatible with the surrounding environment and communities.

The location of VCS, with respect to nearby roads, highways, waterways, and communities and cities in the vicinity, is shown in Figures 2.1-1 and 2.1-2. Figure 2.1-3 shows the 50-mile region. U.S. Highway 77 is the nearest major roadway and is located along the western border of the site. Road access to the site is provided by U.S. Highway 77. There are currently no public roads, railroads, or

waterways within the site. The rail spur discussed in [Subsection 2.2.2.3](#) would not become a public rail line. The proposed VCS site is not located in the Texas Coastal Management Zone (CCC Undated).

The topography of the site consists of fairly flat rangeland, sloping gently from the highest elevations (over 80 feet above MSL) along the northwestern perimeter to the lowest elevations (approximately 12 feet above MSL) near the eastern perimeter (Subsection 6.4.2.1). The area in which the plant facilities would be constructed is currently at an elevation of approximately 80 feet.

The wetlands within the site are located primarily in the floodplain of the Guadalupe River, near the eastern site boundary. Exelon performed a wetland delineation of the site and found 62 individual wetland areas totaling 1843 acres. Approximately 770 acres of this total occur along Linn Lake and are well outside the area expected to be disturbed ([Figure 2.2-1](#)). For the remainder of the site outside of the Linn Lake area, 42 wetlands totaling 139 acres were determined to be isolated based on field surveys. Sections 2.4.1 and 4.3.1 address wetlands and wetland impacts in more detail.

According to the Natural Resources Conservation Service (NRCS), a division of the U.S. Department of Agriculture, much of the site is considered “prime or unique farmland,” as defined by NRCS § 657.5, Identification of Important Farmlands (see Subsection 4.1.1.1 for a more detailed discussion). The site is currently primarily used for livestock grazing. Herds of approximately 1000 to 1200 cattle and 150 horses are shifted from parcel to parcel for grazing. There are two residences within the site boundary associated with ranch operations. These residences are expected to be relocated outside the site boundary. There are three leases authorizing recreational hunting of white-tail deer, feral hogs, wild turkeys, and doves on the site property. These leases will be restricted or terminated as a condition of sale of the property to Exelon.

#### **2.2.1.2 The Vicinity**

The vicinity is defined as the area within 6 miles of the site (Figures 2.1-2 and [2.2-2](#)). The topography of the area is characterized by fairly flat land, with elevations ranging from sea level to about 80 feet in areas to the north-northeast and north-northwest of the site (Subsection 6.4.2.1). Based on GIS and aerial interpretation of the vicinity using USGS land use classifications, the largest use category is rangeland. Of the approximately 71,936 acres within the 6 miles ([Figure 2.2-2](#) and [Table 2.2-1](#)), approximately 0.9 percent is water and 99.1 percent is land. Of the total land, 47 percent is classified as rangeland, 24.5 percent is forestland, 19 percent is agricultural, and 7.4 percent is wetland. There are several oil and gas pipelines and wells in the vicinity, belonging to a variety of owners. There is no mining conducted in the vicinity.

There are no government, state, or locally owned recreational areas within 6 miles of the site. However, private property owners in the vicinity have previously allowed seasonal hunting on their

properties. The INVISTA-DuPont Educational services facility, located within 6 miles, is used for education and recreation. The facility sponsors the Wetland Environmental Science Education Encounter program for local school children on 53 acres of wetlands (Koch Jan 2008).

The Victoria Barge Canal provides transport from the Gulf Intracoastal Waterway to the Port of Victoria. A portion of the canal is located within the 6-mile vicinity (Figure 2.1-2). Operation of the canal is described in Subsection 2.5.2.2.3.

The closest municipality (Figure 2.1-3) is the city of Victoria, Texas, approximately 13.3 miles north of VCS. There is a comprehensive land use plan in place for the city of Victoria, discussed in more detail in Subsection 2.5.2.4, which provides guidelines for regulations and development. The jurisdiction of the plan does not extend to the VCS site. There are no schools located within the vicinity (TEA Jun 2007). There are no medical facilities located within 6 miles; the nearest center for medical assistance is the city of Victoria (City-Data 2008). There are no municipal airports within 6 miles. There are no prisons located within 6 miles (TDCJ 2008). The site does not affect current egress limitations, which would come under the purview of local emergency management agencies.

## **2.2.2 Transmission Corridors and Offsite Areas**

New transmission lines would be constructed from the VCS switchyard to termination points in the existing transmission system. Other offsite areas include a rail connection ([Subsection 2.2.2.3](#)), makeup water and blowdown pipelines ([Subsection 2.2.2.4](#)), and an emergency operations facility ([Subsection 2.2.2.5](#)). [Figures 2.2-3](#), [2.2-4](#), and [2.2-5](#) present these offsite facilities locations, except for the emergency operations facility.

### **2.2.2.1 Proposed Transmission Corridors**

Exelon, in cooperation with the Electric Reliability Council of Texas (ERCOT) South Regional Transmission Service Provider Group and American Electric Power (AEP), the transmission service provider, estimates that the following eight 345 kV lines would be needed for the proposed project:

- VCS to Hillje (two lines on double-circuit towers)
- VCS to Coleta Creek (two lines on double-circuit towers)
- VCS to Blessing
- VCS to Whitepoint
- VCS to South Texas Project
- VCS to Cholla

ERCOT is the operator of the electric grid and manager of the deregulated market for 75 percent of the land area and 85 percent of the electric load for the state of Texas (ERCOT Feb 2006).

Proposed routes for the new transmission lines would be determined under the Public Utility Regulatory Act of 2001 (Title 2, Texas Utilities Code), which requires electric utilities (AEP) to obtain a certificate of convenience and necessity before providing electrical service to the public. The Act empowers the Public Utility Commission of Texas (PUCT) to issue the certificate, providing certain conditions are satisfied regarding community values, recreational and park areas, historical and aesthetic values, environmental integrity, the need for the service, and other considerations. PUCT regulations regarding certificates of convenience and necessity are found in the Texas Administrative Code, Title 16, Part 2, Chapter 25.

In its application for a certificate, AEP would submit a detailed routing study that includes a description of the process of selecting the study area, identifying the routing constraints, selecting potential line segments, and the selection of the preferred and alternate routes. Maps of the proposed routes would include habitable structures, radio transmitters and other electronic installations, airstrips, irrigated pasture or cropland, parks and recreational areas, historical and archaeological sites, and environmentally sensitive areas. The certificate application would also include an assessment of the environmental impact of the project. The PUCT requires that public meetings be held and that summaries of public response be supplied with the certificate application. The PUCT would make the final route selection, which is not expected to occur until after a decision to construct the plant is made.

Because the corridor routes are not currently known, Exelon has prepared a macro-corridor analysis to determine probable route characteristics. The analysis is based on a methodology jointly developed by the Electric Power Research Institute (EPRI) and Georgia Transmission Company (GTC). The EPRI-GTC siting methodology (EPRI-GTC Feb 2006) uses GIS software to merge satellite imagery and road, terrain, and existing transmission line data into one digital map of the study area. This map is comprised of a grid of 100-square-foot cells. Each cell on the map is ranked. Features such as residential land use, agriculture and wetlands, historical resources, and important ecological habitats are ranked from one (most suitable) to nine (least suitable). Using the cell values, a computer algorithm calculates optimal paths for three types of suitability surfaces:

- Locating with existing transmission lines
- Locating with existing road rights of way
- Crossing less developed areas

The optimal paths are identified as macro-corridors, which tend to be 2 to 3 miles wide. [Figure 2.2-3](#) depicts the macro-corridors, indicating the land uses and important features. [Table 2.2-2](#) provides acreages and aerial percents for land use categories for both the recommended macro-corridor and a 200-foot-wide representative route. Land use in the representative route is primarily agricultural (64 percent). Wetlands and open water represent approximately 6 percent of the representative route land area, while the remainder of the land is urban (2 percent), forest (12 percent), and shrub/scrub/herbaceous (15 percent).

The Whitepoint and STP lines are not new transmission lines, except for the short connection from VCS to the existing STP-Whitepoint line. AEP would construct a loop from VCS to this line that is contained within the macro-corridor. Therefore, the macro-corridor shown in [Figure 2.2-3](#) does not extend to Whitepoint (near Corpus Christi) and STP (southeast of Blessing).

The Cholla line would terminate at a new substation in DeWitt County, approximately 40 miles northwest of VCS. The expected location of the Cholla substation is indicated on [Figure 2.2-3](#). Exelon expects that the route could largely follow an existing 138 kV transmission line in an expanded corridor.

In addition to the direct connections to VCS, there would be new transmission lines and other improvements added to the regional transmission system to prevent line overloads, provide economic dispatch of generated power, and enhance system reliability.

Because the route selection study submitted to the PUCT would be prepared by AEP well after submission of the VCS ESP application, the corridor routes ultimately selected may be different than those depicted here. Exelon expects that environmental impacts would not be significantly different. AEP would follow the PUCT process, which is expected to result in routing similar to that from the EPRI-GTC process.

#### **2.2.2.2 Cooling Basin Blowdown Line and VCND Transportation Corridor**

A heavy haul road would be built onsite to access the Victoria County Navigation District (VCND) transportation corridor. Transportation of heavy components from a barge facility at the Port of Victoria Turning Basin to the VCS construction site would be accomplished using a heavy haul road and transportation corridor. A 48-inch discharge blowdown line would be installed (buried) within the rights-of-way of the heavy haul road and transportation corridor.

The transportation corridor from U.S. Highway 77 to the barge facility would be approximately 6.8 miles long, extending east from the VCS, down gradient to the Guadalupe River floodplain for approximately 3.7 miles. The corridor would cross the Black Bayou, Sand Bayou, an unnamed water course and gullies, and the Guadalupe River. The construction rights-of-way for the combined



transportation corridor and blowdown line would be approximately 270 feet wide between the VCS and the Guadalupe River, and approximately 300–310 feet wide from the Guadalupe River to the barge facility. The drivable surface of the road would vary from 80–100 feet in width. Information on the construction of the VCND transportation corridor is provided in Section 3.9.

The transportation and blowdown line corridors traverse habitats similar to those described for the bottomland portions of the VCS site, including an overstory of ash and other hardwoods and an understory of saw palmetto in the less disturbed areas. Blowdown pipeline land uses are provided in [Table 2.2-3](#).

#### **2.2.2.3 Rail Spur Connection**

The nearest operating railroad is immediately adjacent to the south boundary of the site (Figure 2.1-2). This rail line is owned and maintained by Union Pacific and is used for the transportation of industrial, chemical, and agricultural resources along U.S. Highway 185. Frequency of use by Union Pacific, Burlington Northern Santa Fe, and Texas Mexican Railroad is 54 trains during a 24-hour period (USDOT Mar 2008). As depicted in [Figure 2.2-2](#), a connection from this rail line to the new rail spur would be constructed near the southern corner of the site.

#### **2.2.2.4 Raw Water Makeup System and Intake Structure**

Makeup water to the cooling basin would be drawn from the Guadalupe River at a new raw water makeup (RWMU) system intake structure and pumping station, as shown in [Figure 2.2-5](#). The new pumping station is approximately 0.6 miles southwest of the Guadalupe-Blanco River Authority (GBRA) Saltwater Barrier on the Guadalupe River and approximately 11.8 miles southwest of the VCS site. The RWMU intake structure and canal would occupy approximately 39 acres of cropland and pasture. Three possible routes (designated as A, B, and C) for the makeup water pipeline are under consideration and have been surveyed. Land uses for each of the routes are provided in [Table 2.2-3](#).

Route A extends southwest from the pumping station for approximately 1.4 miles before turning northwest for 8.7 miles. This route would cross the San Antonio River, Elm Bayou, Cushman Bayou, Kuy Creek, and a tributary of Dry Kuy Creek. As reported in [Table 2.2-3](#), land uses along this route include cropland and pasture (approximately 65 percent), shrub and brush rangeland (17 percent), mixed forestland (13 percent), and deciduous forest (5 percent).

Route B follows Route A from the pumping station for 1.4 miles then extends another 1.2 miles to the southwest. It then extends to the northwest for 3.5 miles and converges with Route A for the remaining 5.2 miles. This route would cross the San Antonio River and one of its tributaries, Cross Bayou, Cushman Bayou, Kuy Creek, and a tributary of Dry Kuy Creek. Land uses along this route

include shrub and brush rangeland (37 percent), cropland and pasture (44 percent), mixed forestland (14 percent), and evergreen forest (5 percent).

Route C extends northwest from the pumping station for 8.5 miles to the VCS. It crosses the San Antonio River, Elm Bayou, Kuy Creek, a tributary of Kuy Creek, and Dry Kuy Creek. This route also crosses a Natural Resources Conservation Service Wetlands Reserve Program area between Elm Bayou and Kuy Creek. Land uses along this route include cropland and pasture (41 percent), forested wetlands (35 percent), shrub and brush rangeland (10 percent), and mixed forestland (14 percent).

The primary land covers include cropland and pasture, shrub and brush rangeland, and mixed forests. Vegetation within these land covers is similar to that described for these land covers on the VCS site. Assessment of impacts to jurisdictional waters has yet to be determined (pending delineation and USACE confirmation).

#### **2.2.2.5 Emergency Operations Facility**

Exelon will maintain an emergency operations facility (EOF) to assist with the management of off-normal events at VCS. The EOF will also serve to coordinate event response activities with federal, state, and local emergency management agencies. The EOF will be located in Victoria, Texas, outside the VCS 10-mile emergency planning zone.

### **2.2.3 The Region**

The region is defined as the area within 50 miles of the VCS site, but excluding the site and vicinity discussed in [Subsection 2.2.1](#). All or parts of 16 Texas counties are located within 50 miles of the VCS site: Aransas, Bee, Calhoun, Colorado, DeWitt, Goliad, Gonzales, Jackson, Karnes, Lavaca, Matagorda, Nueces, Refugio, San Patricio, Victoria, and Wharton. Figure 2.1-3 shows the 50-mile radius bounded by the 16 counties. Major land use classifications and waterways in the region are shown in [Figure 2.2-6](#). Major highways and rail lines are shown in Figure 2.1-3.

In determining what regional land use information would be relevant to [Subsection 2.2.3](#), Exelon evaluated worker commuting patterns and other economic data to determine the counties in the region subject to land use changes from the proposed project. The evaluation determined that the potential for land use changes was limited to the site, the vicinity, and those counties in the region that would receive the bulk of new residents and taxes. Therefore, the counties of interest that are the focus of this subsection are: Calhoun, DeWitt, Goliad, Jackson, Refugio, and Victoria. Additional information on land use in the region is provided in Section 2.5. There are no known county land-use plans for any of these six counties.

As summarized in [Table 2.2-4](#), the region within 50 miles of the site encompasses 5,024,000 acres. Of that, 887,760 acres (17.5 percent) are water. Land use categories within 50 miles include 33.7 percent agriculture, 24.3 percent forestland, 18.5 percent rangeland, 3.3 percent wetlands, 2.4 percent urban, and 0.4 percent barren land.

In the region, there are several federal, state, county, and city public lands, offering both recreational and educational services. These public lands are primarily owned and maintained by the U.S. Fish and Wildlife Service, Texas General Land Office, Texas Parks and Wildlife Department, and private conservation agencies. They are discussed in detail in Subsection 2.5.2.5.2.

#### **2.2.3.1 Victoria County**

Victoria County is located in the Gulf Coastal Plain region of southeastern Texas. Victoria County is bounded on the north by Lavaca and DeWitt Counties, on the east by Jackson County, on the west by Goliad County, and on the south by Refugio and Calhoun Counties. Primary access routes in Victoria County include U.S. Highways 59, 77, and 87. The city of Victoria has a comprehensive land use plan that primarily discusses zoning within the city, Victoria 2020: *Remembering the Past, Preparing for the Future*. Additional information on the city of Victoria and Victoria County land use and recreation is provided in Subsections 2.5.2.4 and 2.5.2.5.

Victoria County has a total area of 889 square miles, of which 882.5 square miles are land and 6 square miles are water (TXAC Undated a). The county elevation increases from the southeast to the northwest, with the elevation rising from sea level to 300 feet near Mission Valley in the northwest (TSHA 2007a).

In 2002, there were 1286 farms totaling approximately 513,828 acres in Victoria County (NASS 2002a). The 2002 numbers reflect a rise from 1084 farms in 1997 and 1018 farms in 1992 (AgCensus 2004a). The 2002 numbers reflected an increase in total farm acreage from 458,111 acres in 1997 and 430,736 acres in 1992. (AgCensus 2004a)

The chief agricultural products of Victoria County are cattle, sorghum for grain, corn for grain, soybeans, cotton, and hay. The chief agricultural crops have not changed since the 1992 Census of Agriculture was conducted. In 2002, the yields of agricultural products for Victoria County were:

- 69,544 head of cattle and calves
- 941,824 bushels of sorghum for grain
- 1,766,516 bushels of corn for grain
- 320,840 bushels of soybeans as beans

- 15,696 bales of cotton
- 36,486 tons dried of all hay

#### 2.2.3.2 Calhoun County

Calhoun County is located in the Gulf Coastal Plain between Corpus Christi and Houston. Calhoun County is bordered on the north by Victoria and Jackson Counties; on the east by Matagorda County; and on the south and west by Aransas County, Refugio County, and the Gulf of Mexico. The county seat of Calhoun County is Port Lavaca, accessible by major roadways that include U.S. Highway 87 and Texas 35. Railroad service from the coastal areas inland is provided by Union Pacific and Burlington Northern Santa Fe. Additional information on Calhoun County land use and recreation are provided in Subsections 2.5.2.4 and 2.5.2.5.

The total area of Calhoun County is 1032 square miles, of which 512 square miles are land and 520 square miles are water (TXAC Undated b). The county elevation ranges from sea level to 50 feet above sea level (TSHA 2007b).

In 2002, the county had 328 farms and ranches covering 247,827 acres, an increase from 257 farms covering 213,390 acres in 1997 and 249 farms covering 208,073 acres in 1992 (AgCensus 2004b, NASS 2002b). Of the farmland in the county in 2002, 60 percent was devoted to crops (NASS 2002b). Cattle, sorghum for grain, corn for grain, rice, cotton, and soybeans are the chief agricultural products. Since 1992, there has been a steady increase of cattle ranches and soybean farms, while the number of corn for grain, sorghum for grain, rice, and cotton farms has decreased. In 2002, the yields of the primary agricultural products in Calhoun County were:

- 23,892 head of cattle and calves
- 517,415 bushels of sorghum for grain
- 759,918 bushels of corn for grain
- 159,161 hundredweight (cwt) of rice
- 20,287 bales of cotton
- 117,455 bushels of soybeans

#### 2.2.3.3 DeWitt County

DeWitt County is located in the Gulf Coastal Plain and is bounded on the north by Gonzales and Lavaca Counties, on the east by Victoria County, on the south by Goliad County, and on the west by

Karnes County. The county seat is the town of Cuero, the county's largest municipality, accessible by major roadways that include Alternate U.S. Highway 77/183 and U.S. Highway 87. Additional information on DeWitt County land use and recreation is provided in Subsections 2.5.2.4 and 2.5.2.5.

The total area of DeWitt County is 909.2 square miles, of which only 1 square mile is water (TXAC Undated c). The county elevation ranges from 150 feet in the eastern corner to more than 540 feet above sea level in the southwest (TSHA 2007c).

In 2002, the county had 1786 farms and ranches covering 576,896 acres, an increase from 1502 farms covering 560,093 acres in 1997 and 1515 farms covering 569,212 acres in 1992 (AgCensus 2004c, NASS 2002c). Cattle, sorghum for grain, corn for grain, hay, and peanuts are the chief agricultural products. Since 1992, there has been a steady increase in cattle ranches and peanut farms, sorghum farms have decreased, and the number of corn for grain and hay farms has remained relatively unchanged. In 2002, the yields of the primary agricultural products in DeWitt County were:

- 117,113 head of cattle and calves
- 27,676 bushels of sorghum for grain
- 485,198 bushels of corn for grain
- 80,899 tons dried of all hay
- 390,000 pounds of peanuts for nuts

#### **2.2.3.4 Goliad County**

Goliad County is located in the Gulf Coastal Plain in southeast Texas and is bounded on the north by DeWitt County, on the east by Victoria County, on the south by Refugio and Bee Counties, and on the west by Karnes County. The county seat of Goliad County is the town of Goliad, accessible by major roadways that include U.S. Highway 59, Alternate U.S. Highway 77/183, and Texas State Highway 239. Additional information on Goliad County land use and recreation is provided in Subsections 2.5.2.4 and 2.5.2.5.

The total area of Goliad County is 860 square miles, of which 6 square miles are water (TXAC Undated d). The county elevation ranges from 100 feet to 250 feet above sea level (TSHA 2007d).

In 2002, the county had 984 farms and ranches covering 506,019 acres, an increase from 786 farms covering 433,568 acres in 1997 and 726 farms covering 465,365 acres in 1992 (AgCensus 2004d, NASS 2002d). Cattle, sorghum for grain, corn for grain, cotton, and hay are the chief agricultural

products. Since 1992, there has been a steady increase of cattle ranches, while the number of corn for grain, sorghum for grain, and hay farms has remained relatively unchanged. Cotton production has increased from zero farms in 1997 to three farms in 2002. In 2002, the yields of the primary agricultural products in Goliad County were:

- 63,398 head of cattle and calves
- 85,009 bushels of sorghum for grain
- 185,893 bushels of corn for grain
- 2275 bales of cotton
- 34,044 tons dried of all hay

#### 2.2.3.5 Jackson County

Jackson County is located in the Gulf Coastal Plain southwest of Houston. Jackson County is bordered on the north by Lavaca, Colorado, and Wharton Counties, on the east by Matagorda County, on the south by Calhoun County, and on the west by Victoria County. The county seat of Jackson County is Edna, accessible by major roadways that include U.S. Highway 59 and Texas State Highway 111. The city of Edna has an official land management plan, *The Comprehensive Plan for the City of Edna Jackson County*. Additional information on Jackson County land use and recreation is provided in Subsections 2.5.2.4 and 2.5.2.5.

The total area of Jackson County is 858 square miles, of which 830 square miles are land and 28 square miles are water (TXAC Undated e). The county elevation ranges from sea level to 150 feet above sea level (TSHA 2007e).

In 2002, the county had 917 farms and ranches covering 470,500 acres, an increase from 790 farms covering 462,927 acres in 1997 and 775 farms covering 461,829 acres in 1992 (AgCensus 2004e, NASS 2002e). Cattle, sorghum for grain, corn for grain, rice, cotton, soybeans, and hay are the chief agricultural products. Since 1992, there has been a steady increase in the number of cattle ranches and corn for grain, soybeans, and hay farms, while the number of cotton farms has remained relatively unchanged. Sorghum for grain and rice production has been steadily declining since 1992. In 2002, the yields of the primary agricultural products in Jackson County were:

- 52,317 head of cattle and calves
- 2,198,972 bushels of sorghum for grain
- 3,951,824 bushels of corn for grain

- 972,177 cwt of rice
- 45,000 bales of cotton
- 215,835 bushels of soybeans
- 30,818 tons dried of all hay

#### 2.2.3.6 Refugio County

Refugio County is located in the Gulf Coastal Plain of Texas. Refugio County is bordered on the north by Victoria and Calhoun Counties, on the east by Aransas County, Hynes Bay, and Copano Bay, on the south by San Patricio County, and on the west by Bee and Goliad Counties. The county seat of Refugio County is the city of Refugio, accessible by major roadways that include U.S. Highway 77, Alternate U.S. Highway 77/183, and Texas State Highway 202. Additional information on Refugio County land use and recreation is provided in Subsections 2.5.2.4 and 2.5.2.5.

The total area of Refugio County is 818 square miles, of which 770 square miles are land and 48 square miles are water (TXAC Undated f). The county elevation ranges from sea level at the shore to 100 feet above sea level in the northwest corner (TSHA 2007f).

In 2002, the county had 274 farms and ranches covering 505,954 acres; an increase in the number of farms from 230 farms covering 550,165 acres in 1997. There were 230 farms covering 667,177 acres in 1992 (AgCensus 2004f, NASS 2002f). Cattle, sorghum for grain, corn for grain, cotton, and hay are the chief agricultural products. Since 1992, there has been a steady increase in the number of cattle ranches, while the number of hay farms has remained relatively unchanged. Production of corn for grain, sorghum for grain, and cotton has steadily declined. In 2002, the yields of the primary agricultural products in Refugio County were:

- 41,239 head of cattle and calves
- 1,388,470 bushels of sorghum for grain
- 590,411 bushels of corn for grain
- 39,419 bales of cotton
- 5613 tons dried of all hay

#### 2.2.4 References

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**Table 2.2-1  
Site and Vicinity Land Use (Acres)**

Land Use Category	Site <sup>(a)</sup>	Vicinity
<b>Urban or Built-up Land</b>		
Residential	0	36
Industrial	0	463
Mixed Urban or Built-up Land	0	8
Total	0 (0%)	507 (0.7%)
<b>Agricultural Land</b>		
Cropland and Pasture	10	13,499
Confined Feeding Operations	0	143
Other Agricultural Land	0	58
Total	10 (0.1%)	13,700 (19%)
<b>Rangeland</b>		
Herbaceous Rangeland	0.92	2060
Shrub and Brush Rangeland	9,451	31,693
Mixed Rangeland	0	51
Total	9,452 (82%)	33,804 (47%)
<b>Forestland</b>		
Deciduous Forestland	91	2834
Evergreen Forestland	0	808
Mixed Forestland	3.1	13,957
Total	94 (0.8%)	17,599 (24.5%)
<b>Water</b>		
Streams and Canal	0	348
Lakes	132	33
Reservoirs	0	268
Total	132 (1.1%)	649 (0.9%)
<b>Wetland<sup>(b)</sup></b>		
Isolated Wetlands	139	2450
Adjacent Wetlands	1,704	2879
Total	1,843 (16%)	5,329 (7.4%)
<b>Barren Land</b>		
Sandy Areas Other than Beaches	0	4
Transitional Areas	0	345
Total	0 (0%)	349 (0.5%)
<b>Total</b>	<b>11,532</b>	<b>71,936</b>

(a) Site land use values are a combination of NOAA Anderson Level 1 and 2 Land Use/Land Cover and wetlands data collected in a site-wide wetland delineation. There is no land use code for wetlands data because the data was collected during the wetlands delineation and does not correspond directly to the Anderson Level 2 characterization.

(b) The designation of "isolated" and "adjacent" are based on field observations and have not been verified by USACE.

**Table 2.2-2**  
**Recommended Macrocorridor and Representative Route Land Use**

Land-Use Category	Recommended Macrocorridor		Representative Route	
	Acres	Percent of Area	Acres	Percent of Area
Open water	3,169	0.99	13	0.46
Urban	15,422	4.80	70	2.49
Barren land	535	0.17	1	0.04
Deciduous forest	23,181	7.22	203	7.22
Evergreen forest	10,594	3.30	127	4.53
Mixed forest	1,170	0.36	11	0.38
Shrub/Scrub	41,520	12.93	361	12.85
Herbaceous	6,104	1.90	65	2.33
Hay/Pasture	115,973	36.11	1,056	37.59
Cultivated crops	82,542	25.70	747	26.59
Woody wetlands	15,596	4.86	124	4.41
Emergent herbaceous wetlands	5,374	1.67	31	1.10
Total	321,180	100	2,809	100

**Table 2.2-3  
Offsite Areas Land Use (Acres)**

Land Use Category	RWMU Intake Pipeline			Blowdown Pipeline
	Route A	Route B	Route C	
Urban or Built-up Land				
Residential	0	0	0	0
Industrial	0	0	0	0
Mixed Urban or Built-up Land	0	0	0	0
Total	0	0	0	0
Agricultural Land				
Cropland and Pasture	91.5	70.3	48.9	0
Confined Feeding Operations	0	0	0	0
Other Agricultural Land	0	0	0	0
Total	91.5	70.3	48.9	0
Rangeland				
Herbaceous Rangeland	0	0	0	0
Shrub and Brush Rangeland	24.7	58.0	12.1	0.4
Mixed Rangeland	0	0	0	0
Total	24.7	58.0	12.1	0.4
Forestland				
Deciduous Forestland	6.8	0	0	0
Evergreen Forestland	0	8.5	0	0
Mixed Forestland	18.8	21.8	16.1	13.3
Total	25.6	30.3	16.1	13.3
Water				
Streams and Canal	0	0	0	0
Lakes	0	0	0	0
Reservoirs	0	0	0	0
Total	0	0	0	0
Wetland				
Forested Wetland	0	0	41.6	8.4
Non-forested Wetland	0	0	0	5.5
Total	0	0	41.6	13.9
Barren Land				
Sandy Areas Other than Beaches	0	0	0	0
Transitional Areas	0	0	0	0
Strip Mines, Quarries, and Gravel Pits	0	0	0	0
Total	0	0	0	0
Total	141.8	158.7	118.7	27.6

**Table 2.2-4**  
**50-Mile Region Land Use (Sheet 1 of 2)**

Land Use Category	Acres	Percent
<b>Urban or Built-up Land</b>		
Urban (1990 Enhanced)	19,247	
Residential	30,347	
Commercial and Services	9,740	
Industrial	48,471	
Transportation, Communications and Utilities	7,852	
Industrial and Commercial Complexes	10	
Mixed Urban or Built-up Land	758	
Other Urban or Built-up Land	2,133	
Total	118,558	2.4%
<b>Agricultural Land</b>		
Cropland and Pasture	1,685,753	
Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticultural Areas	200	
Confining Feeding Operations	399	
Other Agricultural Land	4,990	
Total	1,691,342	33.7%
<b>Rangeland</b>		
Herbaceous Rangeland	172,045	
Shrub and Brush Rangeland	687,801	
Mixed Rangeland	69,456	
Total	929,302	18.5%
<b>Forestland</b>		
Deciduous Forestland	226,704	
Evergreen Forestland	213,745	
Mixed Forestland	778,885	
Total	1,219,334	24.3%
<b>Water</b>		
Streams and Canal	5,539	
Lakes	13,696	
Reservoirs	7,331	
Bays and Estuaries	14,804	
Other Waters	837,390	
Total	878,760	17.5%
<b>Wetland</b>		
Forested Wetland	85,827	
Non-forested Wetland	79,583	
Total	165,410	3.3%

**Table 2.2-4**  
**50-Mile Region Land Use (Sheet 2 of 2)**

<b>Land Use Category</b>	<b>Acres</b>	<b>Percent</b>
Barren Land		
Beaches	5,346	
Sandy Areas Other than Beaches	2,181	
Strip Mines, Quarries, and Gravel Pits	3,753	
Transitional Areas	10,013	
	Total	0.4%
Total	5,024,000	