2.2 LAND

An understanding of the land involved in the proposed project is essential to analyses on land use, ecology, and other disciplines in Chapters 4 and 5. Accordingly, this section describes the land characteristics of the VCSNS site and the vicinity, transmission corridors, offsite areas, and the region.

2.2.1 THE SITE AND VICINITY

2.2.1.1 The Site

The VCSNS site is defined as the approximately 2,560 acres within the site boundary (Figure 2.2-1) that include VCSNS Unit 1, the Fairfield Pumped Storage Facility, the southern portion of the Monticello Reservoir, and the location of the proposed Units 2 and 3; plus approximately 1,000 acres south of the site boundary. This additional land, for which the boundaries are not well defined, would be involved in construction activities (temporary facilities, laydown areas, and spoils disposal areas) or contain easements for the blowdown pipeline and the access road. It also contains the New Nuclear Deployment (NND) office, which is located in the southeast portion of the site and is used by personnel responsible for the licensing and construction of Units 2 and 3 (Figure 2.1-1). Total area for the site is approximately 3,600 acres.

Once the units begin operation, the site boundary would be identical to the exclusion area boundary depicted in Figure 2.2-1, which is the union of an approximate 1-mile radius circle (not an exact circle) centered on Unit 1 and a 3,390-foot radius circle centered on the proposed location for Units 2 and 3. The area within approximately 1 mile of Unit 1 is posted, and access to this area is controlled. SCE&G and Santee Cooper own the area inside the site boundary. As the majority owner, SCE&G controls all the land within the greater VCSNS site. SCE&G is the NRC-licensed operator for Unit 1. As described in Chapter 1, SCE&G has been authorized by Santee Cooper to act as their agent in applying for a COL for Units 2 and 3.

Based on geographical information system and aerial interpretation of the site using U.S. Geological Survey land use classifications, the largest use within the approximately 2,560 acres enclosed by the site boundary is mixed forest, comprising approximately 1,090 acres. Approximately 784 acres are covered by the waters of the Monticello Reservoir. A significant portion of the property (approximately 492 acres) consists of urban or built up land including: generation and maintenance facilities, laydown areas, parking lots, roads, mowed grass, and transmission line rights-of-way. Approximately 174 acres are classified as transitional areas that are barren land. Figure 2.2-1 illustrates the U.S. Geological Survey land use classifications on the VCSNS site. Table 2.2-1 tallies the site acreage by U.S. Geological Survey land use classification. Figure 2.1-4 is an oblique aerial photograph that provides a sense of site land use.

The topography of the site consists of low rolling hills carved by a creek and drainages with elevations ranging from approximately 560 feet to 210 feet above

MSL (USGS 1969). The Mayo Creek crosses the VCSNS site from north to south and discharges below the Parr Reservoir. Streamside management zones at the site are protected in accordance with best management practices established by the South Carolina Forestry Commission (U.S. NRC 2004). No mineral deposits are actively mined within the VCSNS site (USGS 2005). The area is known to have deposits of clay, sand, and gravel (USGS 2003).

Forested areas within the VCSNS site are actively managed by SCANA Services' Forestry Operations group, and timber is occasionally harvested. Once timber is removed, the harvested areas are replanted with tree species appropriate to the terrain, soils, and drainage characteristics of a site.

No railroads, natural gas pipelines, or major waterways traverse the VCSNS site. A Norfolk Southern rail line runs along the east side of the Broad River just beyond the VCSNS site boundary. An existing railroad spur connects Unit 1 to this Norfolk Southern line. A natural gas pipeline serving the Parr Combustion Turbines is approximately 0.8 mile south of the site. In addition to the transmission corridors owned and operated by SCE&G (see Subsection 2.2.2), Duke Energy has two 230kV transmission lines in a right-of-way that traverses the site near the western boundary.

Access to Unit 1 is through County Road 311 (Ollie Bradham Boulevard) from SC 215 (north, south and east). Access and egress to the site by road is limited by the topographic features such as the Broad River to the west and the Monticello Reservoir to the north. SC 213 has a single two-lane bridge that crosses the Broad River and provides access and egress from the west to SC 215 and then to the site from the east.

The Broad River 100-year floodplain ranges from approximately 10 to 1,500 feet wide at the VCSNS site (FEMA 1982). The Broad River is not a wild and scenic river (NPS 2006). No prime farmland soils occur on the VCSNS site (AFT 1997). Fairfield County implemented its zoning regulations for new development in June 1999 (Stowers 2006a; Fairfield County 1997). The proposed VCSNS site will be subject to the zoning regulations.

2.2.1.2 The Vicinity

The VCSNS vicinity is roughly defined as the area within 6 miles of the site (Figure 2.1-3). It is located in the Piedmont Province. The vicinity occupies portions of Fairfield, Newberry, and Richland Counties and is rural, with a few homes and small farms, but much undeveloped land. The topography of the vicinity consists of low rolling hills with elevations ranging from approximately 560 feet to 210 feet above MSL (USGS 1999). The community of Jenkinsville is approximately 2 miles southeast of VCSNS (Figure 2.1-3). The town of Peak (population 61) is approximately 1.5 miles south and Pomaria (population 178) is approximately 7 miles to the west (SCBCB 2006).

Land uses within the vicinity are depicted in Figure 2.2-2. The largest land use type within 6 miles is forest. Approximately 56,700 acres is in forest land, followed

by approximately 9,170 acres of water. Approximately, 4,460 acres of land is in agriculture and approximately 1,150 acres of land are urban or built up. The smallest land use types are barren land (approximately 467 acres) and wetlands (approximately 400 acres). Table 2.2-1 lists these land uses and acreages. The acreage figures are based on geographical information system and aerial interpretation of the site using U.S. Geological Survey land use classifications.

The 4,400-acre Parr Hydro Wildlife Management Area managed by the South Carolina Department of Natural Resources for public waterfowl hunting and fishing, is adjacent to the VCSNS site (SCDNR 2006). The Wildlife Management Area includes designated lands on the Enoree District of the Sumter National Forest, the Broad River (SC 34 to the dam at SC 16), and the Monticello and Parr Reservoirs. Camping is allowed on the Broad River within the Sumter National Forest. Other recreation activities such as boating, picnicking, and hiking can be enjoyed at select locations on the Monticello Reservoir, Parr Reservoir, and Broad River, and on the southern portion of Enoree District of the Sumter National Forest. Figure 2.1-3 shows the waterbodies and national forest land in relation to the proposed site.

As depicted on Figure 2.2-2, very few mineral deposits are actively mined in the vicinity of the VCSNS. In 2003, cement was the state's leading nonfuel mineral commodity, followed by crushed stone, construction sand and gravel, kaolin, industrial sand and gravel, and vermiculite. The closest actively mined mineral deposits are crushed stone and clay (USGS 2003). Between 1997 and 2003, the number of farms and acreage of farmland increased in both Fairfield and Newberry counties. During the same period, the number of farms and acreage of farmland decreased in Richland County. In Lexington County, the number of farms increased slightly, and the acreage of farmland decreased (USDA 2002).

Fairfield County has a comprehensive plan and established zoning classifications in 1999 (Stowers 2006b). The only industrial area within 6 miles other than VCSNS is Parr Hydro, which includes both Fairfield Pumped Storage Facility and Parr Hydro (Figure 2.2-2).

2.2.2 TRANSMISSION CORRIDORS AND OFFSITE AREAS

Existing transmission corridors (Subsection 2.2.2.1) are described, because some of the Unit 1 transmission lines may be reconnected to a new switchyard for Units 2 and 3 and proposed new transmission lines would be constructed in these corridors or adjacent to them to the extent practicable. Corridors for the proposed new transmission lines are presented in Subsection 2.2.2.2. Other than transmission corridors, there are no other offsite areas. SCE&G has constructed a new combined site emergency operations facility because of considerations outside the proposed action of this ER. This new facility is approximately 10 miles from the VCSNS site. The new facility is not further considered in this environmental report.

2.2.2.1 Existing Corridors

SCE&G has eight transmission lines and Santee Cooper has two transmission lines that connect the Unit 1 switchyard to the transmission system. All 10 lines operate at 230kV. There is also a line that connects Unit 1 to the 115kV transmission system. In addition, there are transmission corridors crossing SCE&G property at VCSNS that contain lines not connected to Unit 1. There is a Duke Power Company corridor running approximately northwest from Parr Hydro, and an SCE&G corridor running approximately northeast from Parr Hydro.

Beginning at the Unit 1 switchyard, the SCE&G transmission corridors generally run in a southerly direction, with four lines terminating near VCSNS, one near Edgefield, South Carolina, and three near Columbia, South Carolina. The Santee Cooper lines run approximately east and west to substations near Blythewood and Newberry, South Carolina, respectively. The following transmission lines occupy the SCE&G and Santee Cooper corridors (Figure 2.2-3).

- *VCSNS-Parr No. 1 and No. 2* — These two SCE&G lines occupy the same 240-foot corridor to the Parr Substation. The lines' lengths are each 2.3 miles. For approximately 0.5 mile, these lines share the corridor with SCE&G's Ward line and Santee Cooper's Newberry line.

- *VCSNS-Fairfield No. 1 and No. 2* — These two lines provide power to and from SCE&G's Fairfield Pumped Station Facility. The lines are 1 mile long and occupy a 170-foot, wholly owned corridor.

- *VCSNS-Lake Murray No. 1 (previously Edenwood)* — This line connected Summer Station to the Edenwood Substation near Cayce, South Carolina, on the west side of Columbia. The line was built by SCE&G and occupies a 100-foot right-of-way. SCE&G rerouted this line to a new Lake Murray Substation near the McMeekin and Saluda Hydro Stations at the Lake Murray dam. This rerouting was independent of any proposed new reactors at the VCSNS site and resulted in this line being renamed Summer-Lake Murray No. 1.

- *VCSNS-Pineland* — This SCE&G line provides power to the Pineland Substation 6 miles northeast of Columbia. The right-of-way width is 240 feet for the approximate 19 miles that the line shares the corridor with the Denny Terrace line and then a 100-foot corridor for the remaining 5.5 miles. Santee Cooper's Blythewood line parallels this line for approximately 17 miles.

- *VCSNS-Denny Terrace* — This SCE&G line to the Denny Terrace substation, 2 miles north of Columbia, follows the Pineland corridor for approximately 19 miles and then continues for approximately 7 miles in a 100-foot right-of-way. Santee Cooper's Blythewood line parallels this line for 17 miles.

- *VCSNS-Ward* — This SCE&G line provides power to the Ward Substation, near Edgefield, South Carolina. For the first 0.6 mile, it runs with the Newberry and Parr lines and then it parallels the Newberry line across the Broad River. For the remaining distance of the total 41 miles, it is the sole occupant of a 100-foot corridor.

- *VCSNS-Blythewood* — The Blythewood line is owned by Santee Cooper. It runs for approximately 23 miles, sharing the corridor with the Pineland and Denny Terrace lines for the first 17 miles. For the remaining 6 miles, it occupies its own 100-foot corridor.

- *VCSNS-Newberry* — This Santee Cooper line, which is approximately 17 miles long, provides power to the Newberry Substation. It follows the Ward line until the lines cross the Broad River after which it continues as the sole occupant of a 100-foot corridor.

In total, SCE&G and Santee Cooper have approximately 170 miles of transmission lines (120 miles of corridor) for Unit 1 that occupy approximately 2,060 acres of corridor. The corridors pass through land that is primarily rolling hills covered in forests or farmland. The areas are mostly remote, with low population densities. Land uses are presented in Table 2.2-2.

2.2.2.2 Proposed Transmission Corridors

The existing transmission corridors to the VCSNS site would continue to support the overall VCSNS site, but some of the Unit 1 transmission lines could be reconnected to a new switchyard for Units 2 and 3. SCE&G and Santee Cooper estimate that three additional 230kV lines would be needed for Unit 2, and three additional 230kV lines would be needed for Unit 3. However, the 16 transmission lines (existing and proposed) would be connected to the units in the most effective manner. Therefore, some of the new transmission lines could be connected to the Unit 1 switchyard. It is expected that some of the onsite corridors would be used differently than is currently done and some could be abandoned.

The specific routes for all six new lines are determined using siting procedures developed by SCE&G and Santee Cooper that address land use, environmental impacts, and cultural resource impacts. These siting procedures are described in Subsection 4.1.2. The new transmission lines are routed in the existing corridors described in Subsection 2.2.2.1 to the extent practicable. The potential routing and termination points for the new lines are:

- VCSNS-Killian — This SCE&G line would be routed to the vicinity of Winnsboro and then generally follow the I-77 corridor to connect to the existing Killian Substation near Killian, South Carolina, southeast of the plant and northeast of Columbia. The corridor length is approximately 37 miles (SCE&G 2008, SCE&G 2009).

- VCSNS-Flat Creek — This Santee Cooper line would connect to the existing Winnsboro Substation near Winnsboro, then to the existing

Richburg Switching Station near Great Falls, and finally to the existing Flat Creek Substation west of Lancaster, South Carolina (Santee Cooper 2008, SCE&G 2009). The corridor length is approximately 72 miles.

- VCSNS-Lake Murray No. 2 — This SCE&G line would connect to the existing Lake Murray switchyard for the McMeekin and Saluda Hydro Stations near the eastern boundary of Lake Murray. The two (existing and proposed) Lake Murray lines would be rebuilt as a double-circuit line in the existing 19-mile corridor. (SCE&G 2008)

- VCSNS-St. George — This double-circuit SCE&G line would connect to a new substation near St. George, South Carolina. The corridor length is approximately 134 miles. (SCE&G 2008, SCE&G 2009)

- VCSNS-Varnville — This Santee Cooper line would connect to the existing Pomaria Substation, then to Sandy Run Substation near Sandy Run, then to Orangeburg Substation in Orangeburg, then to a proposed Byrds Substation near St. George, and then to the existing Varnville Substation near Varnville, South Carolina, in Hampton County (Santee Cooper 2008, Santee Cooper 2009). The total corridor distance is approximately 167 miles.

In addition to the transmission lines, SCE&G would construct three lines to connect the Unit 1 and Units 2 and 3 switchyards. Several existing transmission lines would need to be upgraded to distribute the additional power throughout the transmission system. These are identified in Table 2.2-3.

The new lines could require constructing new structures, moving existing structures, widening existing corridors, and/or constructing new corridors as determined by the siting process described in Subsection 4.1.2. SCE&G and Santee Cooper have completed transmission line siting studies (SCE&G 2008, Santee Cooper 2008, Santee Cooper 2009) to identify viable corridors for the new lines. These potential routes are shown in Figure 2.2-4 and the associated land uses are presented in Table 2.2-4. In total, the potential transmission lines cover approximately 429 miles that occupy approximately 6100 acres of corridor. As with the existing corridors, the potential corridors are composed mainly of forested or agricultural lands. The land use impact analysis is addressed in Subsection 4.1.2.

The lengths of the two new Santee Cooper single-circuit lines (VCSNS-Flat Creek and VCSNS-Varnville) would total 239 miles. Approximately 40.1 miles of new corridor would be required for these two lines; however, nearly 39.5 of these miles (approximately 17.2 miles for Flat Creek and 22.3 miles for Varnville) will be adjacent to existing corridors. The remaining 0.6 mile would be new corridor not adjacent to existing corridors. (Santee Cooper 2008, Santee Cooper 2009). Santee Cooper has developed internal routing processes because it is a utility wholly owned by the State of South Carolina, outside of the jurisdiction of the SC Public Service Commission. The Byrds substation has not yet been constructed; however, development of this facility is included in Santee Cooper's future plans in

order to increase system-wide reliability. Therefore, the impacts of the Byrds substation are not addressed in this environmental report. (Santee Cooper 2009)

The SCE&G VCSNS-Lake Murray No.2 line would utilize existing corridors for its entire length (SCE&G 2008). The SCE&G siting study identified one potential route for the VCSNS-Killian line and one for the VCSNS-St. George line. Approximately 19 miles of the 37-mile VCSNS-Killian line and 66 miles of the 134-mile VCSNS-St. George line would be located adjacent to existing corridors that are maintained for electrical transmission, water, gas or sewer (SCE&G 2008). SCE&G has initiated its three-phase process to meet requirements outlined by the Public Service Commission of South Carolina for investor owned electric utilities to select final routes. At that time, SCE&G will update the data for each siting study area and implement the public participation component of the siting process. Based on the updated data, alternate routes would be developed for each of the future 230 kV lines and an alternatives analysis would be conducted for each. A comprehensive evaluation and ranking of the routes would be completed before selecting the final routes.

2.2.3 The Region

All or parts of 22 counties (21 in South Carolina and one in North Carolina) are within 50 miles of the proposed VCSNS site (Figure 2.1-2). The 50-mile radius around the site is bordered by I-85 from Atlanta to Charlotte to the northwest, I-95 lies to the southeast, future I-73 from Roanoke, Virginia, to Myrtle Beach, South Carolina, lies to the northeast, and Savannah River is to the southwest. I-20, I-26, and I-77 each have mileage within 50 miles.

As a starting point in its evaluation, SCE&G reviewed impacts that Unit 1 construction and operation might have had on regional land use. During its review of Unit 1, NRC identified no regional land use impacts from construction or operation (U.S. NRC 1981). Similarly, the Federal Power Commission identified no regional land use impacts from construction and operation of the Parr Shoals Project, which included construction of the Monticello Reservoir and the Fairfield Pumped Storage Facility contemporaneously with Unit 1 (FPC 1974).

These findings are consistent with the conclusion that NRC reached in preparing its generic environmental impact statement for license renewal. The generic environmental impact statement includes the results of NRC case studies of impacts that construction and operation of seven nuclear plants had on offsite land use. Even for plants having large land use impacts (when cooling lake construction was included), land use impacts identified were limited to the site vicinity and those counties in the region that received the bulk of new residents and taxes (NRC 1996).

Therefore, Subsection 2.2.3 focuses on the four South Carolina counties: Fairfield, Newberry, Lexington, and Richland, where 95% of current Unit 1 employees reside (see Subsection 2.5.1). This is because most land use changes would be due to changes in tax revenues associated with new units at VCSNS, which would be limited to the county where the site is located (Fairfield), or

population changes in counties where the greatest number of construction or operations employees lived (Fairfield, Lexington, Newberry, and Richland) (U.S. NRC 2004). These are also the same four counties that NRC analyzed for the Unit 1 construction and operation socioeconomic impacts (U.S. NRC 1981).

One additional aspect of regional land use pertinent to this ER is agricultural products that could be affected by severe accidents. Because of the narrow use of this information and the specialized manner in which it is used (input to computer modeling), SCE&G has included agricultural products in its analyses described in Section 7.2.

The state of South Carolina mandates that cities and counties have comprehensive land use plans. The following descriptions were taken from the Fairfield County (Fairfield 1997), Newberry County (Newberry 1998), Lexington County (Lexington 1999), and Richland County (Richland 1999) plans. Land use within 50 miles is depicted in Figure 2.2-5.

2.2.3.1 Fairfield County

Fairfield County contains approximately 687 square miles, making it the 18th largest county in the state. The largest land use category is forest, accounting for 87% of the total acreage. This includes public, commercial, and noncommercial forests, as well as farm woodlands. Non-forested land, including all urban or developed land, accounts for the remaining 13%. Surface water comprises 4% of the county and is represented by Lake Wateree, the Catawba River, Monticello Reservoir, the Broad River, and Parr Reservoir.

Approximately 3% of the forested land in the county is government-owned. The primary parcel is the Sumter National Forest, located in the northwestern part of the county. Privately owned forestland in the county is dominated by corporations, individuals, and the forest products industry. Only 6% of the forested land is owned by farmers, reflecting the continued decline in farming in Fairfield County since the Depression era. Table 2.2-5 provides more information about these land use patterns. Major parks, recreation, and conservation areas include: Lake Wateree, the Catawba River, Monticello and Parr Reservoirs, Broad River, and Enoree District of the Sumter National Forest.

Developed urban land use represents less than 2% of Fairfield County. It is centered in and around the town of Winnsboro. Additional urban concentrations are found along the shores of Lake Wateree, in Ridgeway, in the Mitford community, and, to a lesser extent, around sections of the Monticello Reservoir and Jenkinsville. Elsewhere, development is characteristically sparse and rural characterizing the county's agricultural past.

The dominant form of residential land use is single-family detached housing. However, mobile homes and other manufactured structures are rapidly increasing in number. Residential development is found in both isolated and cluster patterns along most county roads.

During the 20 years since Unit 1 was constructed, Fairfield County has experienced minimal growth. The population increase from 1990 to 2000 was only about 0.5% per year. The county's economic base continues to be manufacturing, followed by government, industry, and services. Land use trends tend to be evolving with the nationwide movement away from agricultural production and toward a commerce built on the processing/production of goods and the distribution of services (U.S. NRC 2004).

2.2.3.2 Newberry County

Newberry County occupies approximately 631 square miles. According to the Comprehensive Plan for Newberry County, the land is characterized by a mixture of rural and urban uses including agricultural, residential, commercial, industrial, public and semiprivate uses, and vacant land. The Comprehensive Plan study was limited to the areas around the municipalities, the lake shores of Lake Greenwood and Lake Murray, the US-76 corridors between the town of Little Mountain and the city of Newberry, and portions of SC 773, 219, 34, and 121. The unincorporated portions of the county that fall outside the defined study area do not have land use regulations. Major parks, recreation and conservation areas include Lake Murray, Dreher Island State Park, Sumter National Forest, and Lake Greenwood.

Residential development is generally characterized by low- to medium-density single-family development. There are very few multifamily units in the unincorporated areas of the county. The option most selected for affordable housing is the manufactured home. The number of manufactured homes has increased dramatically since 1980. Most are located on individual lots, and more recently in subdivisions.

Unlike a municipality, where there is dense commercial development in a downtown or some other commercial district, Newberry County's commercial development is much less dense. In most cases, the commercial development is limited to stores located at the intersections of major roads. The remainder of commercial development exists in areas that serve local residents.

There is scattered agricultural use throughout the Comprehensive Plan study area; however, most of the prime agricultural land in the county is located outside the study area. There are a number of vacant lots inside and outside the study area. Most of these are located along the lake shores, where most of the neighborhood subdivisions have occurred.

Generally, there is ample land available for future development in the county; however, the exact locations of growth will be guided by two major constraints—natural features and infrastructure. The study area is crisscrossed with streams and rivers, so there will be areas where topography and floodplain characteristics will constrain development. Infrastructure constraints will be mitigated by the construction of additional roads and water treatment facilities as the need arises.

2.2.3.3 Lexington County

Lexington County contains over 110,000 parcels located in an approximately 699-square-mile area. Farmland represents 21% of the land, as the county is a relatively strong agricultural center. However, Lexington County is encouraging the growth of residential areas by touting the quality of the school systems and the accessibility of resources. Overall, Lexington County has no specific “growth control” regulations or ordinances; however, it does have a blend of zoning styles, unrelated to growth control, that encourage a quality type of expansion characterized by a reduction in land allocations that are random and sporadic. According to the Lexington County Land Use Plan, land will continue to be available for development for a variety of uses for several decades. Major parks, recreation, and conservation areas include Lake Murray and Riverbanks Zoo and Garden.

2.2.3.4 Richland County

Richland County occupies approximately 756 square miles. Approximately 38% of the unincorporated portion of the county is developed, while the remaining 62% of the land in the county is undeveloped. The unincorporated portions of the county were divided into four separate planning areas and two subareas to facilitate planning. Major parks, recreation, and conservation areas include Congaree National Park, Harbison State Forest, Sesquicentennial State Park, Riverbanks Zoo and Garden, South Carolina State Museum, and The University of South Carolina’s Williams-Brice Stadium.

The Richland County Comprehensive Plan noted that zoning controls were not established in Richland County until September 7, 1977. The absence of zoning controls and restrictions produced an environment where existing development patterns have been a mixture of many types of residential, commercial, and industrial uses. The plan noted further that rural open spaces and prime farmlands are being converted to residential and other suburban uses. The plan concluded that, in order to protect significant agricultural lands, natural areas, and open space corridors, Richland County will ultimately have to develop specific zoning and growth management tools for directing future development to sustainable areas. As yet, growth control measures have not been developed or adopted.

The Richland County Comprehensive Plan does, however, contain the “Town and Country Planning Concept” which sets forth the following goals:

- Improve the middle landscape in urban and suburban villages — In existing urban and suburban areas, lessen the sprawling character by bringing the landscape into developed areas in order to define and separate neighborhoods. The strategy is to encourage mixed-use village centers that attract employment and services development.

- Promote the idea of towns and villages — In rural areas; promote the development of compact, mixed-use development that has a distinct village edge and connection to the landscape.

- Continue preservation through the use of riparian corridors — The County Riparian Corridor network should be used to develop a sub-contiguous county-wide greenway system. The strategy is to define growth areas while preserving natural systems and rural landscapes.

Section 2.2 References

1. AFT (American Farmland Trust) 1997. *Farming on the Edge: How the Maps Were Made*. Available at http://www.farmland.org/resources/fote/about/maps.asp, accessed May 9, 2006.

2. Fairfield County 1997. *Fairfield County Comprehensive Plan Update*. Adopted April 15.

3. FEMA (Federal Emergency Management Agency) 1982. *Flood Insurance Rate Map*, Fairfield County (Unincorporated Areas), Panel 175 of 200, South Carolina. Effective Date: July 19, 1982. Available at www.msc.fema.gov, accessed October 11, 2006.

4. FPC (Federal Power Commission) 1974. *Final Environmental Impact Statement; Parr Hydroelectric Project No. 1894* — South Carolina, Docket #P-1894-00, March 1974.

5. Lexington 1999. *Lexington County, Supporting Elements for the Comprehensive Plan*. Adopted April 27.

6. Newberry 1998. *Comprehensive Plan — Newberry County.*Adopted February 3, 1999.

7. NPS (National Park Service) 2006. *Wild and Scenic Rivers by State.* Available at http://www.nps.gov/rivers/wildriverslist.html, accessed May 9, 2006.

8. Richland 1999. *Imagine Richland 2020 Comprehensive Plan*. Adopted May 3.

9. Santee Cooper 2008. *V.C. Summer Nuclear Station Units 2 and 3 Transmission Line Siting Study Santee Cooper*. Moncks Corner, South Carolina, Prepared by MACTEC Engineering and Consulting, Inc., Columbia, South Carolina, August 25, 2008.

10. Santee Cooper 2009. *V.C. Summer Nuclear Station Units 2 and 3 Transmission Line Siting Study Santee Cooper*, Revision 1. Moncks Corner, South Carolina, Prepared by MACTEC Engineering and Consulting, Inc., Columbia, South Carolina, October 2009.

11. SCBCB (South Carolina Budget & Control Board) 2006. *South Carolina Statistical Abstract 2005*, Table 10. Annual Estimates of the Population for Incorporated Places in South Carolina (2000-2003). Available at http://www.ors2.state.sc.us/abstract/chapter14/pop10.asp, accessed May 12, 2006.

12. SCDNR (South Carolina Department of Natural Resources) 2006. *South Carolina Rules and Regulations 2006-2007*. Available at http://www.dnr.sc.gov/regs/pdf/wnas.pdf, accessed August 8, 2006.

13. SCE&G 2008. *V.C. Summer Nuclear Station Units 2 and 3 Transmission Line Siting Study SCE&G*. Columbia, South Carolina, Prepared by Facilities Planning & Siting, PLLC, Charlotte, North Carolina, August 2008.

14. SCE&G 2009. Letter, R. B. Clary (SCE&G) to R. L. Darden (U.S. Army Corps of Engineers), V.C. Summer Nuclear Station Units 2 and 3, Docket Numbers 52-027 and 52-028, Combined License Application - Response to NRC Environmental Report (ER) Requests for Additional Information (RAI): USACE- 2, 3, 4, and 5, dated August 6, 2009 (NND-09-0236). ADAMS Accession Number ML092250315.

15. Stowers 2006a. *Fairfield County Zoning Implementation,"* Personal communication between Scott Flickinger, TtNUS and Ron Stowers, Fairfield County Planning, Zoning, and Building Department, June 29, 2006.

16. Stowers 2006b. *Fairfield County Land Use Plan,* Personal communication between Scott Flickinger, TtNUS and Ron Stowers, Fairfield County Planning, Zoning, and Building Department. March 23, 2006.

17. USDA (U.S. Department of Agriculture) 2002. *Table 8. Land in Farms, Value of Land and Buildings, and Land Use: 2002 and 1997.* Available at http://www.nass.usda.gov/Census/Census02/volume1/sc/st45_2_008_008.pdf, accessed June 29, 2006.

18. U.S. EPA 1998. 1*:250,000 Scale Quadrangles of Land Use/Land Cover GIRAS Spatial Data in the Conterminous U.S*. Office of Information Resources Management. Available at http://www.epa.gov/nsdi/projects/giras.htm, accessed November 27, 2006.

19. USGS (U.S. Geological Survey) 1969. Jenkinsville Quadrangle, South Carolina 7.5 Minute Series (Topographic) Map, N3415-W8115/75,1969.

20. USGS 1999. National Elevation Dataset, Edition 1, EROS Data Center, Sioux Falls, South Dakota.

21. USGS 2003. *The Mineral Industry of South Carolina 2003*. Available at http://minerals.usgs.gov/minerals/pubs/state/2003/scstmyb03.pdf, accessed June 29, 2006.

22. USGS 2005. *Mineral Resources Data System:, Reston Virginia*. Available at http://tin.er.usgs.gov/metadtat/mrds.faq.html, accessed August 21, 2006.

23. U.S. NRC 1981. *Final Environmental Statement related to the operation of Virgil C. Summer Nuclear Station Unit No. 1*, Office of Nuclear Reactor Regulation, Washington, D.C., 1981.

24. U.S. NRC 1996. *Generic Environmental Impact Statement for License Renewal of Nuclear Plants*, NUREG-1437, May 1996.

25. U.S. NRC 2004. *Generic Environmental Impact Statement License Renewal for Nuclear Power Plants*, NUREG-1437, Supplement 15 regarding the V.C. Summer Nuclear Station, February 2004.

Table 2.2-1
Site and Vicinity Land Use Acreage

Land Use Category	Site	Vicinity
Urban or Built Up Land		
Residential	—	612
Commercial and Services	—	15
Industrial	492	492
Transportation, Communications and Services	—	33
Agricultural Land		
Cropland and Pastures	—	4,460
Forest Land		
Deciduous Forest	—	1,830
Evergreen Forest	—	3,780
Mixed Forest	1,090	51,000
Water		
Stream and Canals	—	773
Reservoir	784	8,400
Wetland		
Nonforested Wetlands	24	400
Barren Land		
Strip mines, Quarries and Gravel Pits	—	125
Transitional Areas	174	342
Total	2,560	72,300

Source: U.S. EPA (1998)

Table 2.2-2
Major Land Use along Existing Transmission Corridors

	Land Use Categories[(a)]			
Corridor	**Agricultural**	**Forest**	**Industrial**	**Residential**
VCSNS-Parr No. 1 and No. 2				
Percent	—	59	41	—
Area (acres)	—	32	23	—
VCSNS-Fairfield No. 1 and No. 2				
Percent	—	38	31	—
Area (acres)	—	12	9	—
VCSNS-Lake Murray No. 1				
Percent	2.9	92	2.1	2.0
Area (acres)	7	218	5	4.8
VCSNS-Pineland				
Percent	5	93	2	0.1
Area (acres)	14	270	7	0.4
VCSNS-Denny Terrace				
Percent	2	91	3	2
Area (acres)	5	292	11	6
VCSNS-Ward				
Percent	37	58	3	—
Area (acres)	187	297	13	—
VCSNS-Blythewood				
Percent	2	95	2	0.05
Area (acres)	6	229	5	1
VCSNS-Newberry				
Percent	6	86	6	—
Area (acres)	12	179	12	—

(a) Other categories in smaller percentages that are not presented are water, wetland, and barren land.

Table 2.2-3
Proposed Upgrade to the Existing Transmission System

Unit 2 Upgrades
Increase conductor size for existing Denny Terrace-Lyles 230kV line
Increase conductor size for existing Saluda-McMeekin 115kV line
Increase conductor size for existing Lake Murray-McMeekin 115kV line
Increase conductor size for existing Lake Murray-Saluda 115kV line
Add a VCSNS-Winnsboro 230kV line with 230/69kV transformers at Winnsboro
Add a Winnsboro-Richburg 230kV line with 230/69kV transformers at Richburg
Add a Richburg-Flat Creek 230kV line
Unit 3 Upgrades
Connect the existing Canadys-Santee 230kV line to the St. George substation
Connect the existing Wateree-Summerville 230kV line to the St. George substation
Increase conductor size for existing Canadys-St. George 230kV line
Increase conductor size for existing St. George-Summerville 230kV line
Increase conductor size for existing Saluda-Georgia Pacific double-circuit 115kV line
Construct new 230kV switching station at St. George substation
Add a VCSNS-Sandy Run 230kV line with a 230/115kV transformer at Sandy Run
Add a Sandy Run-Orangeburg 230kV line with a 230/115kV transformer at Orangeburg
Add an Orangeburg-Byrds 230kV line with a 230/115kV transformer at Byrds
Add a Byrds-Varnville 230kV line

Table 2.2-4
Major Land Use in Potential Corridors for New Transmission Lines

	Land Use Categories[a][b]					
Corridor	**Agricultural**	**Forest**	**Residential**	**Urban/ built-up**	**Water**	**Wetland**
VCSNS-Flat Creek						
Percent	13	85	0.17	0.89	0.62	—
Area (acres)	150	1000	2.0	10	7.3	—
VCSNS-Killian						
Percent	18	66	—	16	—	—
Area (acres)	69	250	—	60	—	—
VCSNS-Lake Murray No. 2						
Percent	3.0	92	1.1	2.9	0.95	—
Area (acres)	7.0	210	2.5	6.7	2.2	—
VCSNS-St. George						
Percent	39	49	0.019	0.76	1.1	9.5
Area (acres)	590	740	0.29	11	16	140
VCSNS-Varnville						
Percent	21	64	2.8	1.2	1.0	10
Area (acres)	590	1800	80	34	29	290

(a) Urban/built-up category includes: commercial and services; industrial; transportation, communication, and utilities; industrial and commercial complexes; mixed urban or built-up land; and other urban or built-up land.
(b) Other categories in smaller percentages that are not presented are transitional areas and barren land.

Source: U.S. EPA (1998)

Table 2.2-5
Land Use in Fairfield County, 1997

	Acres	Percent of County Land
Total Area	438,425	
Forested Land (by ownership)	383,607	87
Public		
National Forest	11,560	3
Municipal, County, and State	478	<1
Private		
Forest Industries	130,622	30
Farms (farmers)	29,027	6
Corporation and Individuals	211,920	48
Nonforested Land	54,818	13
Developed (urban)	7,350	1
Water	15,416	4
Other	32,052	7

Source: Fairfield (1997)

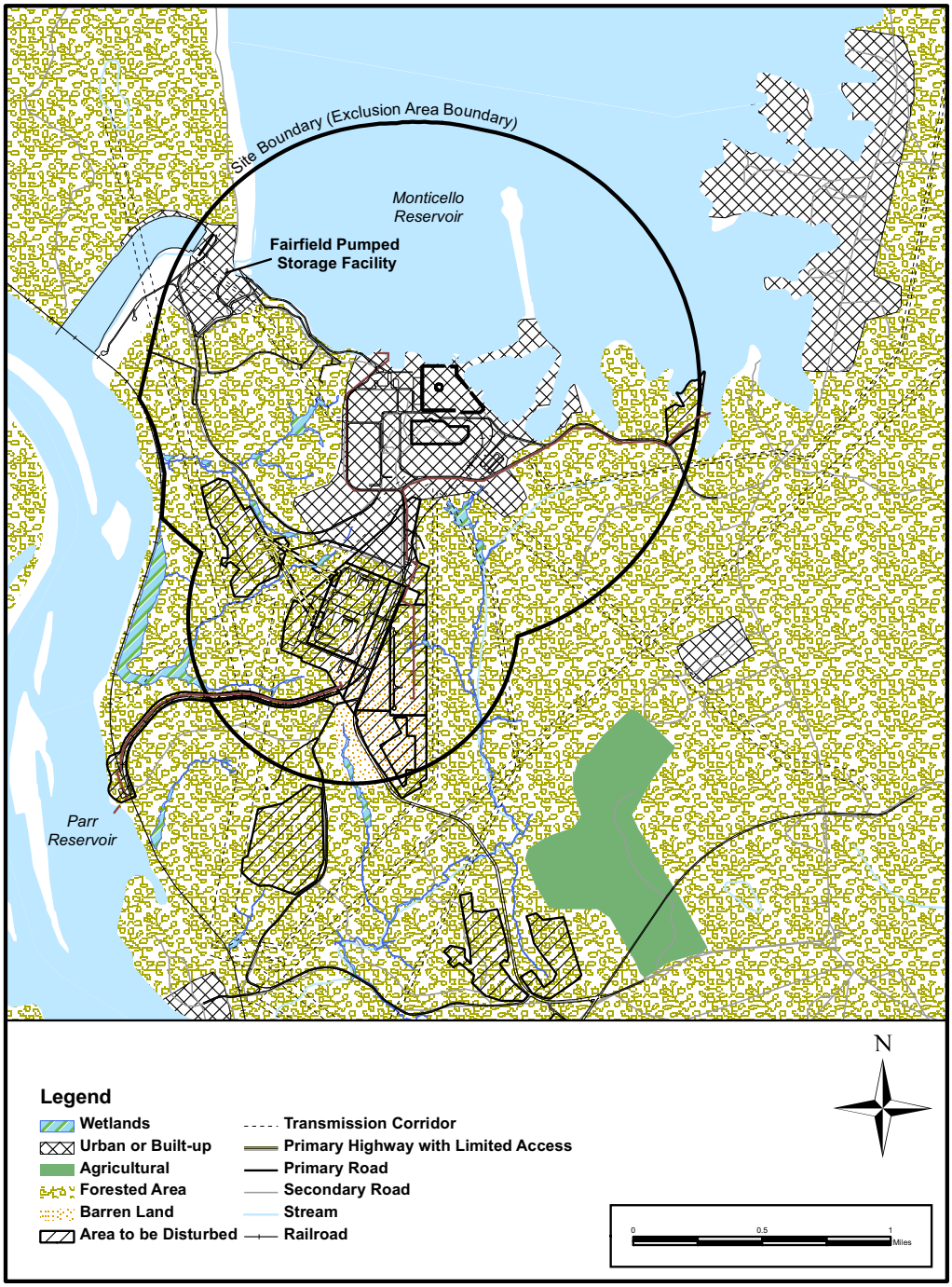

Figure 2.2-1. Land Use on the Proposed Site

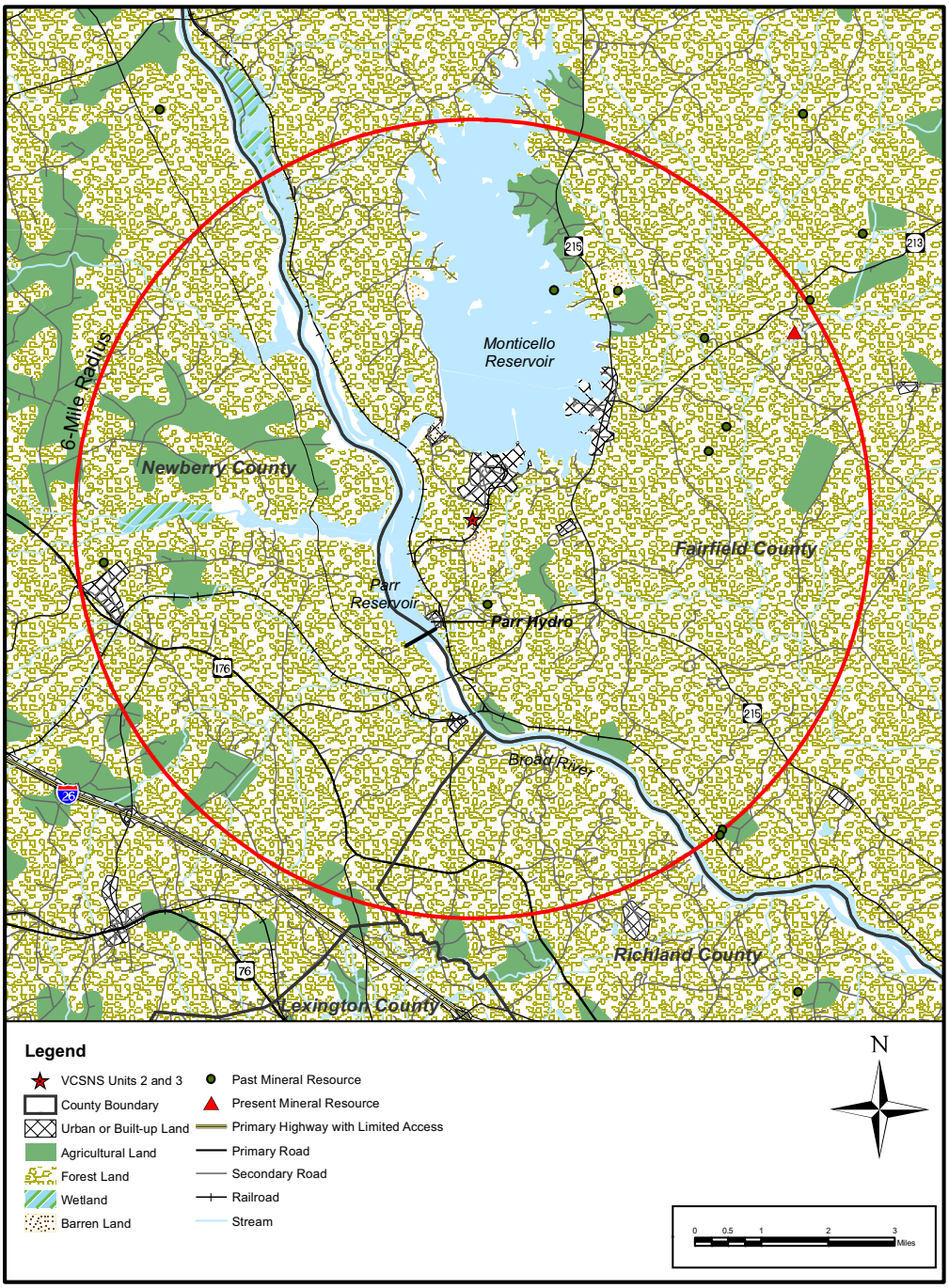

Figure 2.2-2. Land Use in the Vicinity of the Proposed Site

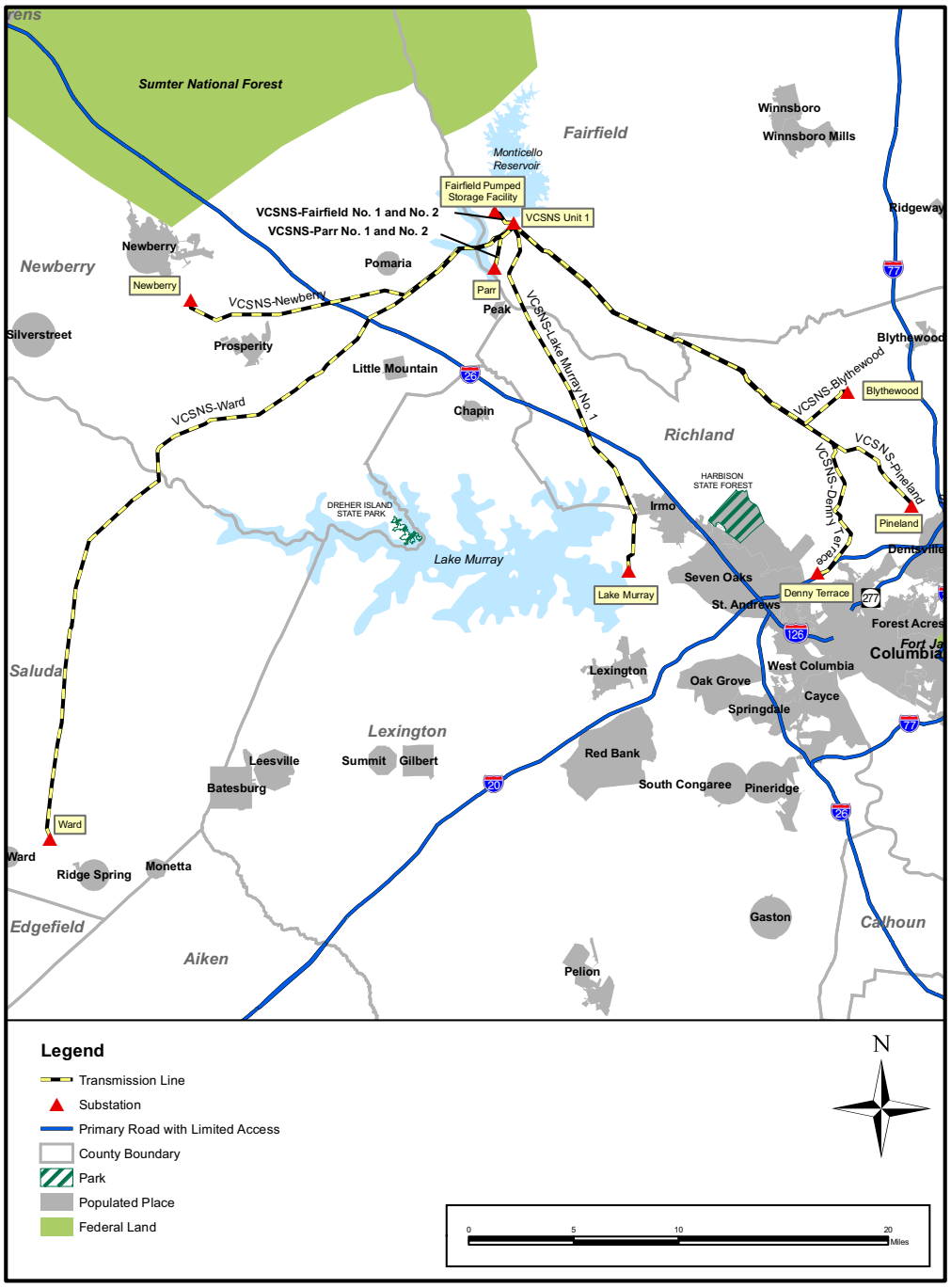

Figure 2.2-3. Existing Transmission System for VCSNS Unit 1

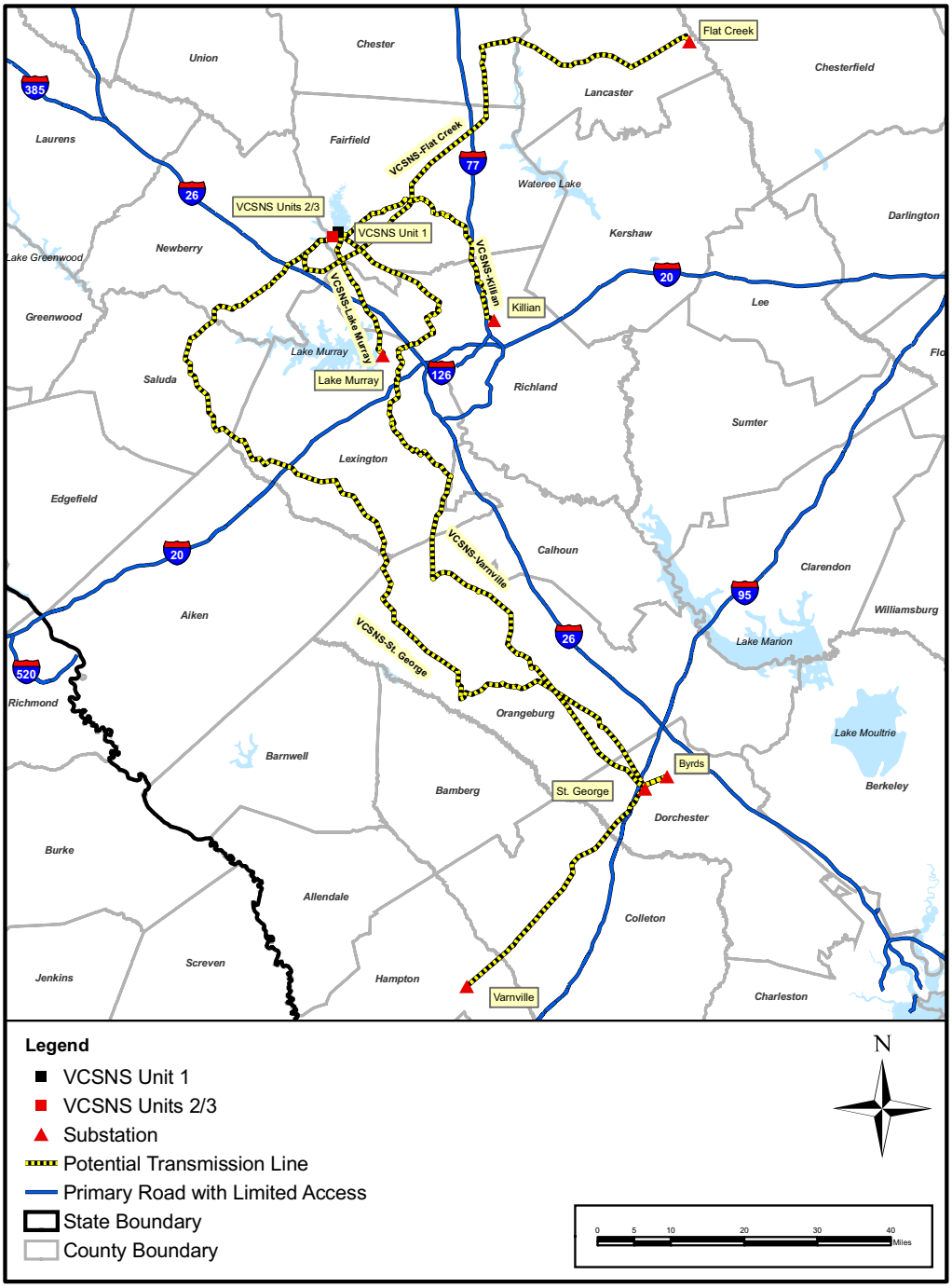

Figure 2.2-4. Potential New Transmission Lines

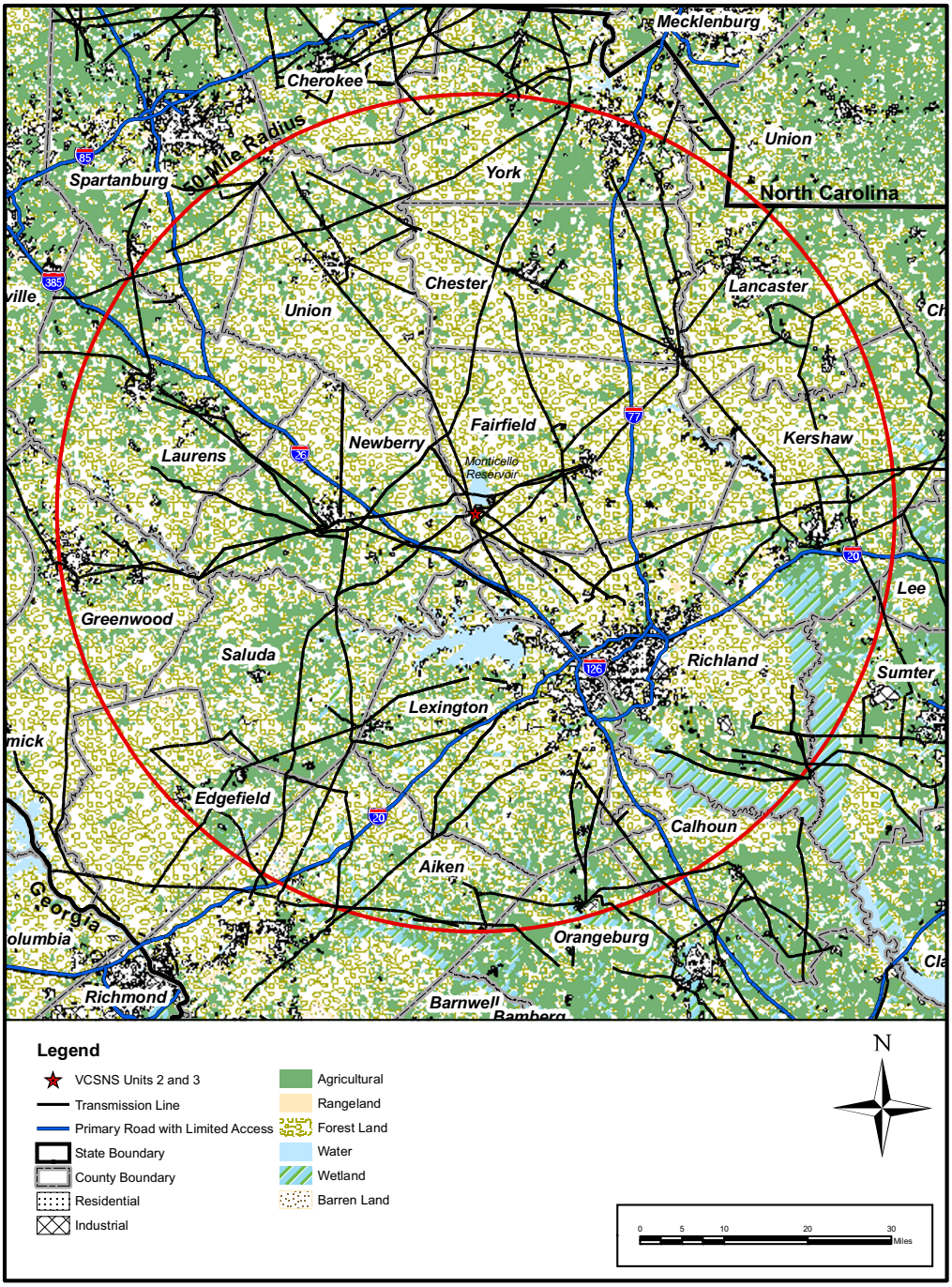

Figure 2.2-5. Land Use in the Region of the Proposed Site