



The Natural Resources Element includes information on local geographic and geologic conditions, climate, agricultural and forest lands, plant and animal habitats, unique parks and open space, scenic areas, water resources, wetlands and flood plains, air quality, and other factors that can significantly impact the natural environment and shape the future development of Newberry County. The on-going challenge posed by natural resources planning is to achieve a balance between productive use of land and resources, maintenance of critical ecological functions, and the protection of residents and property from natural hazards. The aesthetic and recreational appeal of natural resources can increase land development pressures. A thorough assessment of a community's natural resources base and subsequent incorporation of this resource assessment into planning efforts is necessary to avoid depletion or destruction of these sensitive, and often irreplaceable, assets. Valuing and investing in efforts to protect and improve the natural resource base supports the quality of life for all County residents.

Newberry County is located in the Southern Piedmont region of South Carolina between the Broad and Saluda Rivers. The region is characterized by gently undulating to rolling land surfaces along with numerous streams. The mild climate, gently rolling topography, conducive soils, and access to plentiful ground water and major transportation routes combine to make Newberry County very productive for farming and forestry.



## 5.1. Climate

Newberry County is in the Midlands region of South Carolina, bisected east-to-west by the I-26 corridor that links the Columbia and the Greenville-Spartanburg Metro areas. As part of the Midlands region of South Carolina, Newberry County enjoys a warm and temperate climate, with a mean annual temperature of 63.2 degrees (Table 5-1). Winters are mild, with the earliest freeze generally occurring in mid-October and the latest freeze in early April. The mean low temperature is 52 degrees, with a mean high temperature of over 74 degrees. Summers in Newberry can be quite warm. When combined with an average humidity of 74.4%, the heat index can rise substantially in mid-to-late summer. The hottest day on record in the County was 108 degrees in 1952.

The Midlands is typically the driest region of the State, with annual rainfall averaging between 42 to 47 inches. Mean yearly precipitation in Newberry County is slightly above this range at 49.17 inches. Summer precipitation accounts for a slightly higher percentage of the yearly total, in large part due to seasonal thunderstorms. Local precipitation is the lowest in the fall. The annual chance of snow is 47% in Newberry County (*S.C. State Climatology Office, 2022*).

**Table 5-1. Climate Summary for Newberry County**

ANNUAL TEMPERATURES	
Maximum	74.3° F
Minimum	52.0° F
Mean	63.2° F
PRECIPITATION	
Annual Avg. Rainfall	49.17 inches
Annual Avg. Snowfall	1.7 inches
COOLING/HEATING DEGREE DAYS	
Heating Degree Days	2,799
Cooling Degree Days	1,853
GEOGRAPHY	
Elevation	518 feet
Land Area	647.32 square miles
Water Area	16.51 square miles

*Source: Newberry County Economic Development, 2022*

Severe weather occurs in Newberry County primarily in the form of thunderstorms, tornadoes, hail, and drought. Thunderstorms are common in the summer months. The more violent storms generally accompany squall lines and the active cold fronts of late-winter or spring. Strong thunderstorms usually bring high winds, hail, considerable lightning, and on rare occasions spawn tornadoes. Hail falls most often during spring thunderstorms from March through May, with less than two hail days per year in the region. May and August are the peak months for tornadoes in the region. The May peak is primarily due to squall lines and cold fronts, while the August peak is due to tropical cyclone activity. Newberry County ranks ninth highest statewide in tornado events since 1950. There were 36 tornados reported in Newberry County from 1950 to 2020, resulting in \$38 million in damages, 45 injuries and two fatalities (*S.C. State Climatology Office, 2022*).



Overall community vulnerability to climate and natural disasters is calculated across thirteen hazard types (*Central Midlands Hazard Mitigation Plan, 2021*). The most vulnerable area in terms of hazard events and social and economic impact potential is in central Newberry County that includes the City of Newberry. This higher risk area includes much of the County's critical infrastructure, building stock, and population. These risks are detailed in the *Resiliency Element*.

## 5.2. Air Quality

Air quality affects the public health, weather, quality of life and economic potential of a community. One of the primary air quality concerns in South Carolina is ozone. The Environmental Protection Agency (EPA) has set an 8-hour National Ambient Air Quality Standard (NAAQS) for Ozone to reduce the effects of ozone exposure and address the need to increase the margin of public health protection. Based on long-term monitoring data, the EPA designates areas as attainment (meeting the air quality standard) or non-attainment (not meeting the standard).

For areas designated as non-attainment, the S.C. Department of Health and Environmental Control (SCDHEC) and local governments must prescribe specific actions for reaching attainment within a specified time period. These requirements can significantly impact existing industry, economic recruitment efforts and transportation in non-attainment and surrounding areas. For instance, the Non-Attainment New Source Review requirement for areas lapsing into non-attainment status mandates a level of emission reductions for new and modified industrial facilities. The expansion or improvement of local transportation infrastructure to support development can also be impacted under the *Clean Air Act* requirement that transportation plans, programs, and projects cannot create new violations of air quality standards, increase the severity or frequency of existing violations, or delay standards attainment.

Ultimately, air pollution can have adverse health and economic effects that include damage to vegetation, reduced crop yields, increased corrosion of metals, and deterioration of stone and paint on buildings, cars, and cultural landmarks. These potential impacts are of particular concern in Newberry County, where the success of the tourism economic sector is closely linked to the preservation of scenic historic and natural resources. In addition, air quality problems can impede recruitment of new industries and businesses to the area, resulting in reduced investment and employment opportunities.

SCDHEC maintains a State Implementation Plan (SIP) that outlines the State's strategies for meeting NAAQS standards for six common pollutants as set forth by the *Clean Air Act*. All of South Carolina, including Newberry County, is below the current threshold for ambient air quality standards. However, increased urbanization in the Midlands and Upstate metropolitan areas may have future impacts on local air quality. Current air quality problems are attributed to industrial uses, automobile emissions, and open burning practices. Natural sources such as windblown dust and wildfires also play a role in air quality. It is important that local leaders analyze and monitor factors related to air quality as part of the larger region and respond with local solutions that manage air quality within acceptable levels that ensure the health of residents, as well as the economic health of the County.



### 5.3. Land Resources

Newberry County is located in the central midlands region of South Carolina and is bordered by seven counties. The County is 647.32 square miles in size, ranking 25<sup>th</sup> largest in land area among the 46 South Carolina counties. More than 16.5 square miles of the County are water area inclusive of parts of Lake Murray, Lake Greenwood, the Parr Reservoir, and numerous rivers.

The County is situated above the Fall Line, a narrow zone of transition between the Piedmont and the Upper Coastal Plain physiographic regions within the physiographic province known as the Southern Piedmont. The Southern Piedmont extends through central North Carolina, South Carolina, and Georgia and into eastern Alabama. This region is characterized by gently rolling land surfaces that are dissected by numerous streams and tributaries and dominated agriculturally by forests, farms, and orchards. Elevations range from 256 to 780 feet with a terrain that varies from gentle to moderately steep slopes. Groundwater is stored in fractures in the bedrock and in a soil-like layer of weathered rock called saprolite that rests on the bedrock. Groundwater is mainly replaced by precipitation seeping into the saprolite and bedrock fractures.

#### 5.3.1. Soils

In planning for future development, it is important to examine local soil conditions. Soil properties directly influence building and infrastructure construction and costs, agricultural activities and productivity, and the location and design of septic tanks and drain fields. Both the suitability and stability of soils should be considered in the feasibility of new development or major redevelopment. Existing soils on individual sites determine the suitability for specific development types such as low density residential (single-family), high density residential (multi-family), commercial, and industrial uses. This level of detail can only be determined by an individual soil survey for a specific site. However, large-scale soils data from the S.C. Department of Natural Resources (SCDNR) is useful for identifying future development potential for broader areas and districts within the County.

Soil scientists examine a wide range of information in the development of soil survey maps, including soils and subsoils; the angle, length, and shape of slopes; stream sizes and general drainage patterns; the variety of native plants or crops; and rock and mineral deposits. The USDA Soil Survey for Newberry County notes that the soils in the County were “developed under forest in an environment of moderately high temperature and moderately heavy, well-distributed rainfall.” Newberry County soils primarily consist of well-drained soils of varying slope and permeability. The County’s predominant soil types are profiled in Table 5-2.





Table 5-2. Major Soil Types within Newberry County

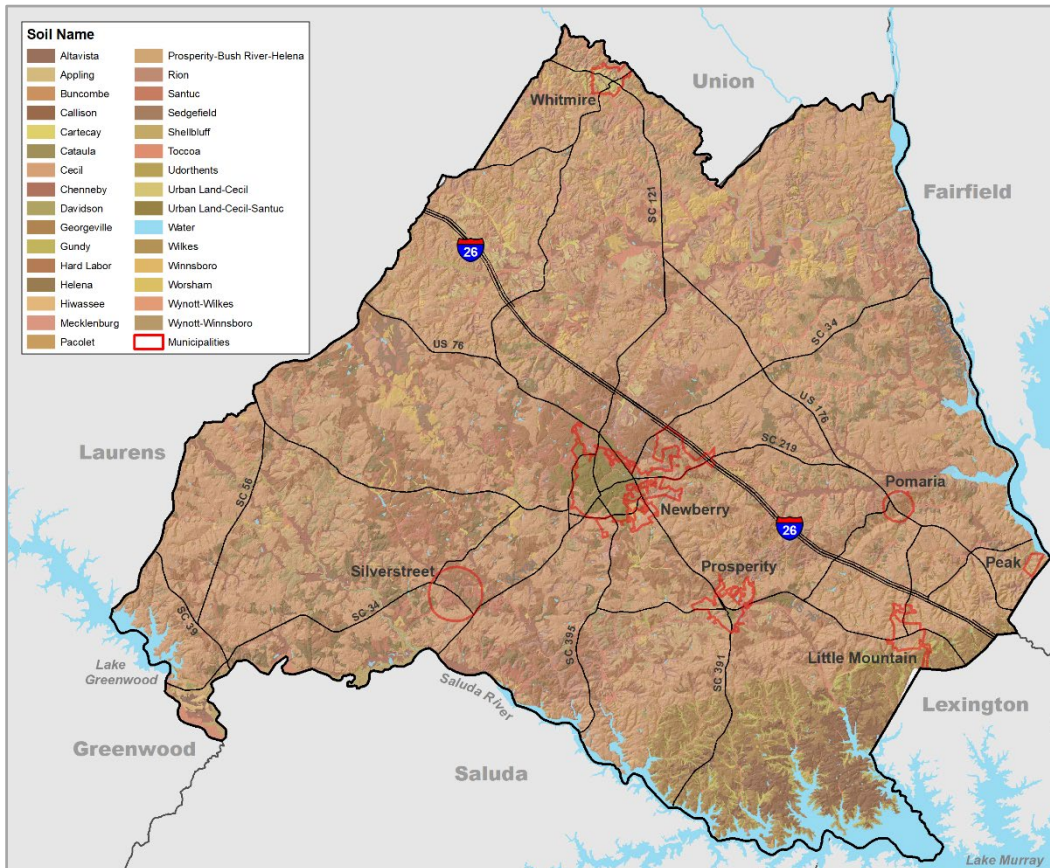
SOIL NAME	SOIL TYPE	SLOPE RANGE	PERCENTAGE/ ACRES (AC)	CHARACTERISTICS
Cecil	sandy clay loam, sandy loam	2 to 15%	36.4% 150,897 ac	Nearly level to steep Piedmont upland soils, very deep, well drained, medium to rapid runoff, moderately permeable
Hard Labor	sandy loam	2 to 10%	10.9% 45,222 ac	Broad nearly level to gently sloping summit and sloping to strongly sloping side slope soils in the southern Piedmont, very deep, moderately well drained, medium to rapid runoff, slowly permeable
Rion	sandy loam, sandy clay loam	6 to 50%	6.6% 27,398 ac	Gently sloping to very steep upland Piedmont soils, very deep, well drained, medium to rapid runoff, moderately permeable
Pacolet	sandy clay loam, clay loam, sandy loam	6 to 50%	6.3% 26,173 ac	Gently sloping to very steep Piedmont upland soils, very deep, well drained, medium to rapid runoff, moderately permeable
Wynott-Winnsboro	Complex	2 to 10%	5.0% 20,884 ac	A soil complex that includes two soil types on gently sloping, moderately steep to steep Piedmont uplands, moderately deep to deep, well drained, medium to rapid or very rapid runoff, slowly permeable
Toccoa	sandy loam	0 to 3%	3.9% 16,302 ac	Piedmont and Upper Coastal Plain valley soils in flood plains and natural levees, very deep, well and moderately well drained, very low runoff, moderately rapid permeability
Georgeville	silty clay loam	2 to 10%	3.6% 14,857 ac	Gently sloping to moderately steep Piedmont upland soils, very deep, well drained, medium runoff, moderately permeable
Helena	sandy loam	2 to 10%	3.4% 13,898 ac	Piedmont upland soils on broad ridges and toe slopes, very deep, moderately well drained, medium to rapid runoff, slowly permeable
Santuc	loamy coarse sand	2 to 15%	2.9% 12,080 ac	Piedmont uplands soils on broad ridges, side slopes, toe slopes and at the heads of small drainage-ways; very deep, moderately well drained, medium to rapid runoff, moderately slow permeability
Chenneby	silt loam	0 to 2%	2.8% 12,080 ac	Soils formed in loamy and silty sediments on flood plains and depressions, very deep, somewhat poorly drained, slow runoff, moderately permeable
Winnsboro	sandy clay, sandy clay loam, sandy loam	2 to 25%	2.6% 10,923 ac	Gently sloping to moderately steep Piedmont upland soils, deep, well drained, medium to rapid runoff, slowly permeable.
Callison	silt loam	2 to 10%	2.2% 9,129 ac	Southern Piedmont soils on gently sloping broad ridges to strongly sloping side slopes, moderately deep, moderately well drained, slow to medium runoff, moderately slowly permeable.

Sources: USDA NRCS Soil Data Mart, 2022



Map 5-1 illustrates the predominance of the Cecil soil series in areas throughout Newberry County. However, it is also important to note that soil data can change over time due to factors including erosion and the construction of buildings and impervious surfaces such as parking lots. While the soil data depicted in Map 5-1 is valuable in assessing the suitability of large areas for general land uses, it reflects only general limitations on urban development and should only be used for broad planning analysis. A detailed soil analysis should be conducted for site-specific development decisions.

Map 5-1. Soils



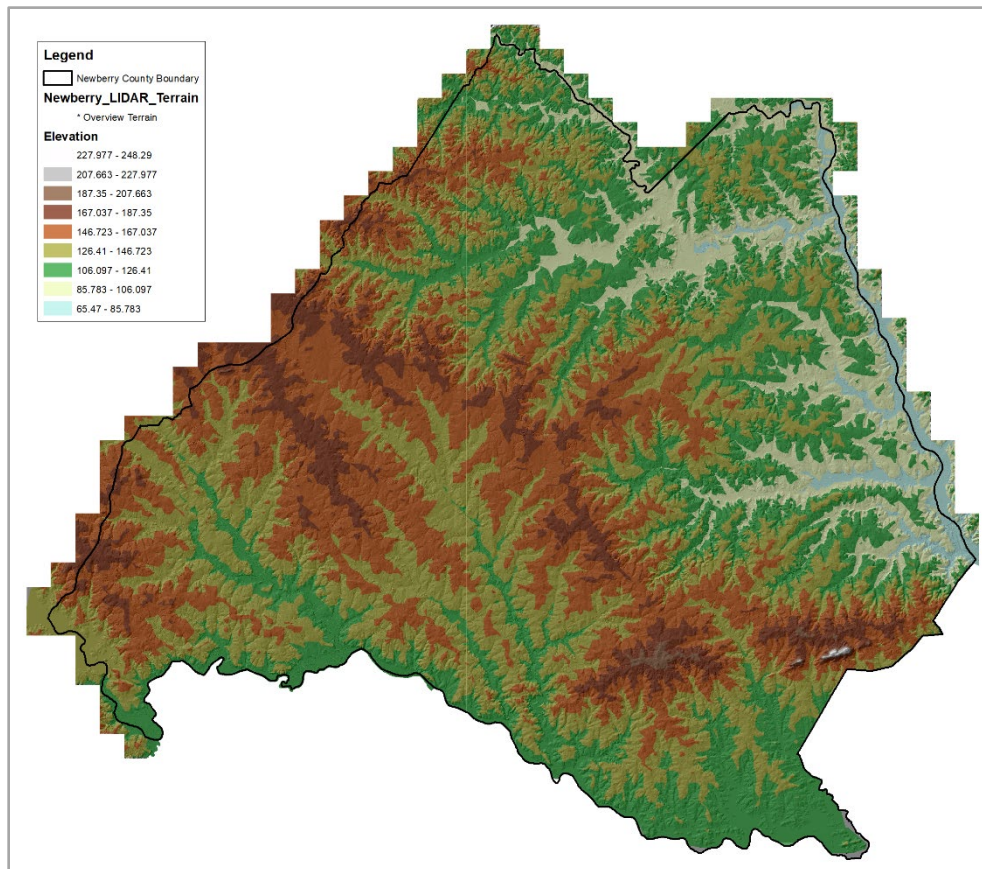
Source: USDA NRCS Soil Data Mart, 2022

### 5.3.2. Elevation and Slope

Elevation in Newberry County ranges from an average of 256 feet above sea level on the water surface of the Parr Shoals Reservoir (*USGS National Water Information System, September 2008*) to the highest elevation of 780 feet above sea level in the County's northwestern area (*USDA Soil Survey for Newberry County, 1960*). Elevations average 450 to 500 feet in the central area of the County. Little Mountain is the most prominent elevation in southern area of Newberry County, rising to approximately 614 feet above sea level (*USGS Geographic Names Information System, September 2008*). Map 5-2 illustrates the topography of Newberry County using 2008 SCDNR LiDAR elevation data.



Map 5-2. Elevation



Sources: Newberry County GIS 2022; SCDNR LiDAR Data, 2008

Slope characteristics have a direct impact on the types of land uses that have developed or may be developed in the future. Sites with little to no slopes of less than 8% are typically most easily and cost effectively developed to accommodate most types of land uses. As the slope percentage increases, sites become more difficult and expensive to develop. The land use types that are appropriate for such sites also become more limited. In addition, drainage problems increase with steeper topography due to the increased rate of stormwater runoff. Grading becomes more extensive and difficult for building foundations as well as for parking, roads, driveways, and sidewalks. For sites with steeper slopes, the challenges to development can equate to prohibitive costs for certain land uses. Land uses and their associated slope limitations are summarized in Table 5-3.

The topography of Newberry County is largely conducive to many types of development, with some limitations in higher elevations and low-lying areas. Representative slope data is available from the USDA Soil Survey for Newberry County. Based on the general slope range characteristics and data provided in Table 5-3, more than half of the land area in Newberry County (218,813 acres) has a slope of 8% or less and is suitable for all types of land uses. Development suitability is only slightly more limited for one-third of the County (135,342 acres), where a slope range of 9% to 16% readily accommodates residential and light commercial development and is suitable for heavier commercial and industrial development with appropriate site work.



Table 5-3. Suitable Slopes and Newberry County Percentages

SLOPE AND GENERAL LAND USES	ACRES	PERCENTAGE
<b>Slope 8% or less</b> - all types of land use where there is no danger of periodic flooding	218,812.96	54.4%
<b>Slope 9 to 16%</b> - residential and light commercial development	135,342.47	33.7%
<b>Slope 17 to 24%</b> - low-density residential development, not well-suited for commercial or industrial development	43,020.76	10.7%
<b>Slope 25% and greater</b> - not well-suited for any type of intense development	4,786.95	1.2%
<b>Total Acres</b> (not including water)	<b>401,963.14</b>	<b>100.0%</b>

Source: USDA NRCS Soil Data Mart, 2022

Areas at the higher end of the slope range may not be as suitable for all types of development. Nearly 11% (43,021 acres) of the County's land area has a slope range between 17% and 24%. Much of this land is generally suitable for low density residential uses, but site work is usually needed for commercial or industrial development. The slope range for only one percent of the County's land (4,787 acres) is 25% or greater. These lands are generally not suitable for intense development such as higher density subdivisions or commercial or industrial developments. However, such development may be possible with appropriate site work.

The slope ranges of many soils do not directly coincide with the slope ranges included in Table 5-3, making it possible that an even higher percentage of land actually falls in the more desirable categories for various types of development. However, other soil limitations such as wetness, permeability, drainage, and flooding may be difficult and expensive to mitigate, or may fall under regulatory limitations.

### 5.3.3. Residential Development Limitations

Access to wastewater treatment in Newberry County is limited to areas served by four providers. The *City of Newberry* has an extensive network of sewer lines that provides service to 3,992 residential customers located within the City of Newberry as well as areas outside of the City. The City's sewer service area includes areas to the west and to the east stretching to I-26. The *Town of Whitmire* provides sewer service to 996 customers located within the Town. The *Newberry County Water and Sewer Authority* (NCWSA), a special purpose district established in 1963, provides sewer service for approximately 720 customers in the unincorporated area of the County and the Town of Prosperity. NCWSA sewer service branches out to the west of Newberry along U.S. Highway 76 and Jalapa Road to I-26, to the east of the City along I-26, and in the eastern area of the County south of Newberry through Prosperity to Lake Murray and extending along I-26 to Little Mountain and the Cannon's Creek Wastewater Treatment Plant near Pomaria. The *Town of Prosperity* provides sewer collection for approximately 800 customers in the Town as well as a few limited locations outside of town, with wastewater treatment provided by the NCWSA.

Residential development in much of Newberry County must rely on septic tanks due to limited access to sewer service. The use of septic systems for sewage disposal places additional limitations on residential development, impacting both location and lot sizes. State law, enforced by SCDHEC, requires that a parcel of land proposed for septic service is capable of allowing proper operation

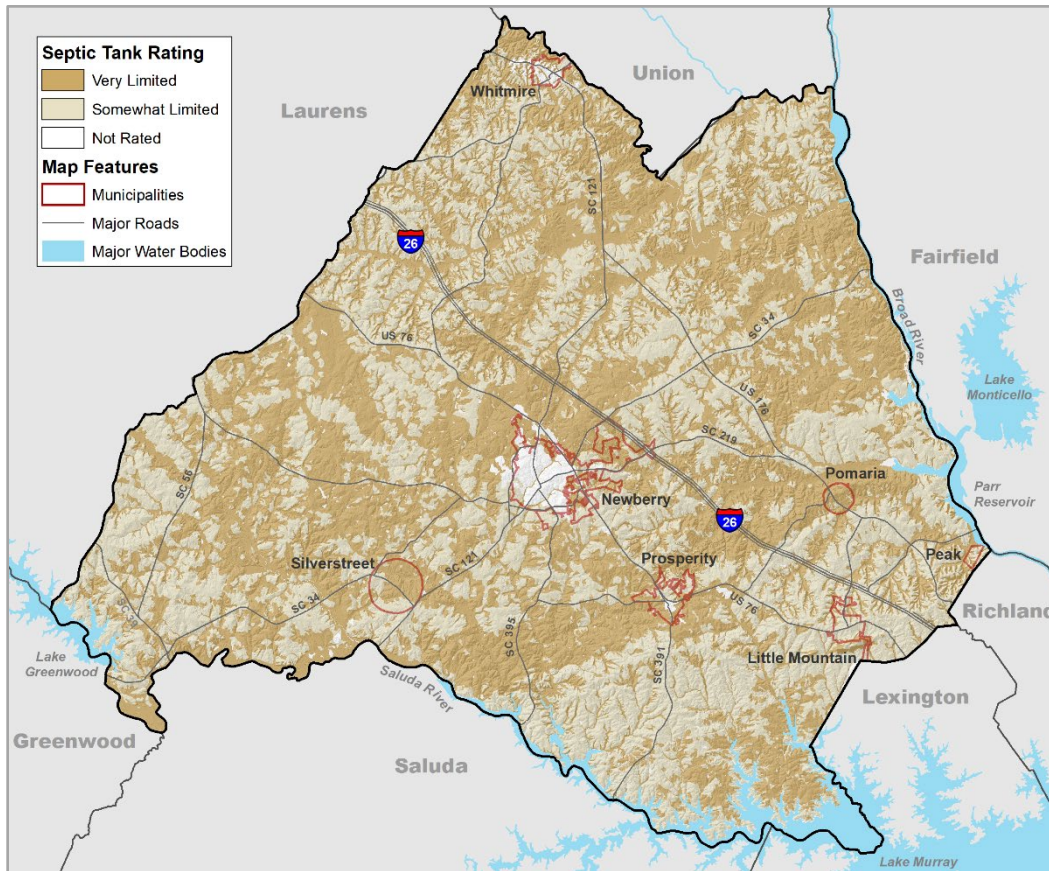




of the individual system, including a drain field. Suitability criteria are based on factors including soil type, parcel size, and slope.

Map 5-3 illustrates areas in the County with soils rated as “very limited” or “somewhat limited” under the *Septic Tank Soil Absorption Field Ratings* of the USDA Natural Resources Conservation Service (NRCS). These ratings are used to guide site selection for safe disposal of household effluent based on soil properties that affect absorption of the effluent and impact of construction and maintenance of the system. Public health impact is also a consideration. While the ratings provide general information on soil suitability for septic tanks, onsite evaluation by SCDHEC is required before development and construction. Also, the USDA ratings apply to the soils in their present condition and do not consider potential impacts on soil quality by current and future land uses.

**Map 5-3. Septic Tank Soil Absorption Ratings**



Source: USDA NRCS Soil Data Mart, 2022

More than half (51.9%), or 215,144 acres, of land for which detailed soil data is available in Newberry County has been rated as “very limited” for septic tank soil absorption. This rating indicates that the soil has one or more features that may be unfavorable for use as a septic system absorption field and could result in poor performance and high maintenance if not properly installed. An additional 43.9% of County soils (182,259 acres) are rated as “somewhat limited,” indicating that the soils have features that are moderately favorable for use as a septic system absorption field, but that do not limit the use of such systems in these areas.



#### 5.3.4. Agricultural and Forest Lands

Agriculture and forestry are important components of both the landscape and the economy of Newberry County. These lands are home to many of the area's critical natural resources and provide valuable wildlife habitat, windbreaks, enhanced water quality, decreased ambient temperatures, groundwater recharge areas, mitigation of stormwater run-off and erosion, and open space.

Soil data provided by the USDA Soil Data Mart reveals that more than one-third of the land area of the County (141,323 acres) is prime farmland. Prime farmland, as defined by the USDA, is "*land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses.*" Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources. Farming these soils results in the least damage to the environment. Soils that have a high water table or are subject to flooding may qualify as prime farmland soils if the limitations are overcome by drainage or flood control and if they are not frequently flooded during the growing season. These soils comprise 8% of the land area in Newberry County, encompassing 33,385 acres of land.

It is possible for states to define and delineate soils that, while not designated as prime farmlands, may be farmlands "of statewide importance" for the production of food, feed, fiber, forage, and oilseed crops. In general, this land includes soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops – some as high as prime farmlands given favorable conditions – when treated and managed according to acceptable farming methods. Based on the criteria set by the State of South Carolina, 28% of the soils in Newberry County (116,735 acres) are considered to be of statewide importance.

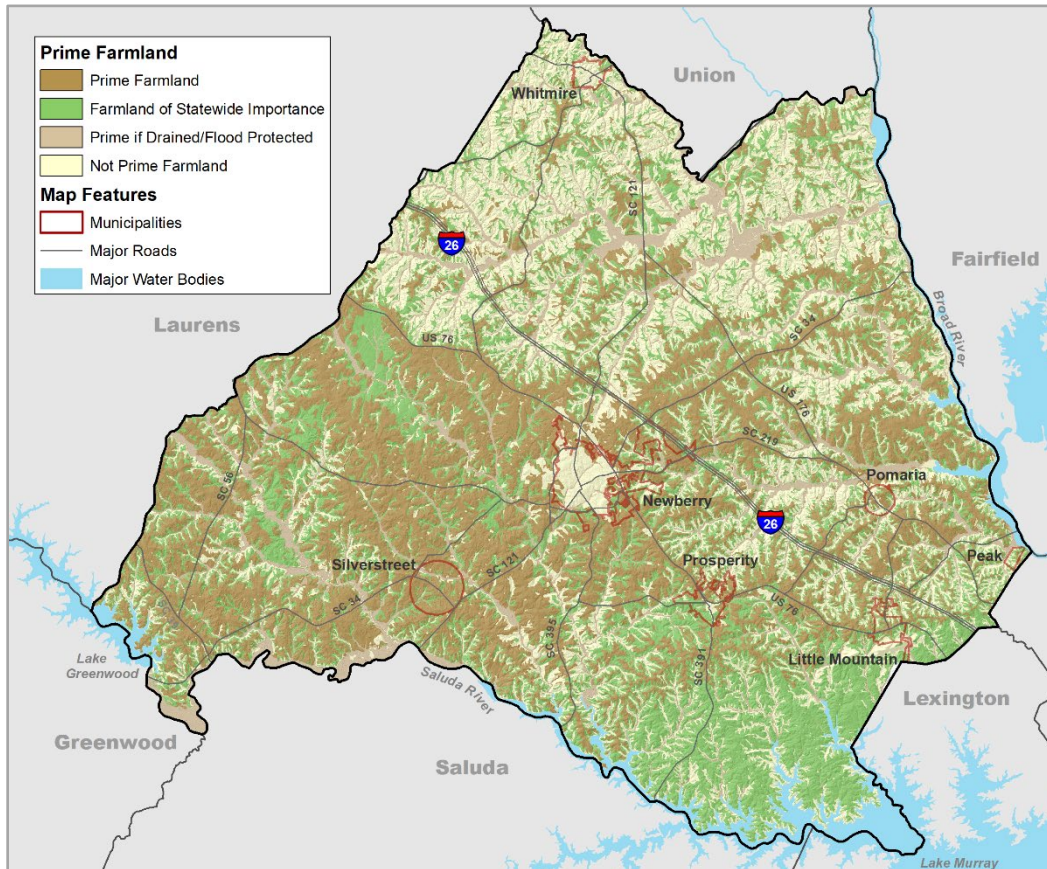
Unfortunately, the relatively low topography and deep fertile soils of land qualifying as prime farmland generally make such lands the most readily available and least expensive to develop for uses such as residential subdivisions and commercial developments. Conversion of prime farmlands is of concern because these lands are essential to provide greater levels of food production at lower costs. As prime farmlands are developed, the farming industry is forced to bring more marginal agricultural land into production. Marginal farmland has less productive and erodible soil and more irregular topography such as steeper slopes, resulting in greater labor, equipment, and materials costs.

Map 5-4 illustrates the prevalence of prime and other important farmlands in Newberry County. Prime farmlands are located throughout the County but are particularly abundant in the southwestern portion of the County south of U.S. Highway 76. Farmlands of statewide importance are scattered throughout the County but are concentrated in the southeastern corner of the County north of Lake Murray. The map reveals that the hillier topography that characterizes the



northern area of the County is much less conducive to farming than the relatively flat lands found in the southwestern area of the County.

Map 5-4. Prime Farmlands



Source: USDA NRCS Soil Data Mart, 2022

The predominant Newberry County soils in the Cecil and Hard Labor soil series are individually suited for a number of crops, including small grains, corn, cotton and soybeans, while soils in the prominent Rion and Pacolet series are suited for small grains, hay and pastures. Newberry County ranked 6<sup>th</sup> statewide in 2017 in farm marketing of crops, livestock, and livestock products, with sales totaling more than \$142.9 million (*USDA Census of Agriculture, 2017*). The majority of sales (96%) were for livestock and livestock products, which totaled more than \$136.8 million and ranked 4<sup>th</sup> statewide. The County ranks 1<sup>st</sup> in milk production statewide, 4<sup>th</sup> in cattle and calves, 5<sup>th</sup> in poultry and egg production, 7<sup>th</sup> in hogs and pigs raised, and 7<sup>th</sup> in sheep, goats, wool, and related products produced. Among the leading crops produced in the County are hay (13,111 acres), soybeans (3,089 acres), corn for silage or greencrop (2,869 acres), and wheat for grain (1,774 acres). The County also ranks 8<sup>th</sup> highest in the production of cultivated Christmas trees and other short rotation woody crops. Newberry County encompasses 345,786 acres of forestland and ranks eleventh highest statewide in delivered value from timber harvests (*S.C. Forestry Commission, 2020 Annual Report on Forest Conditions in South Carolina*).

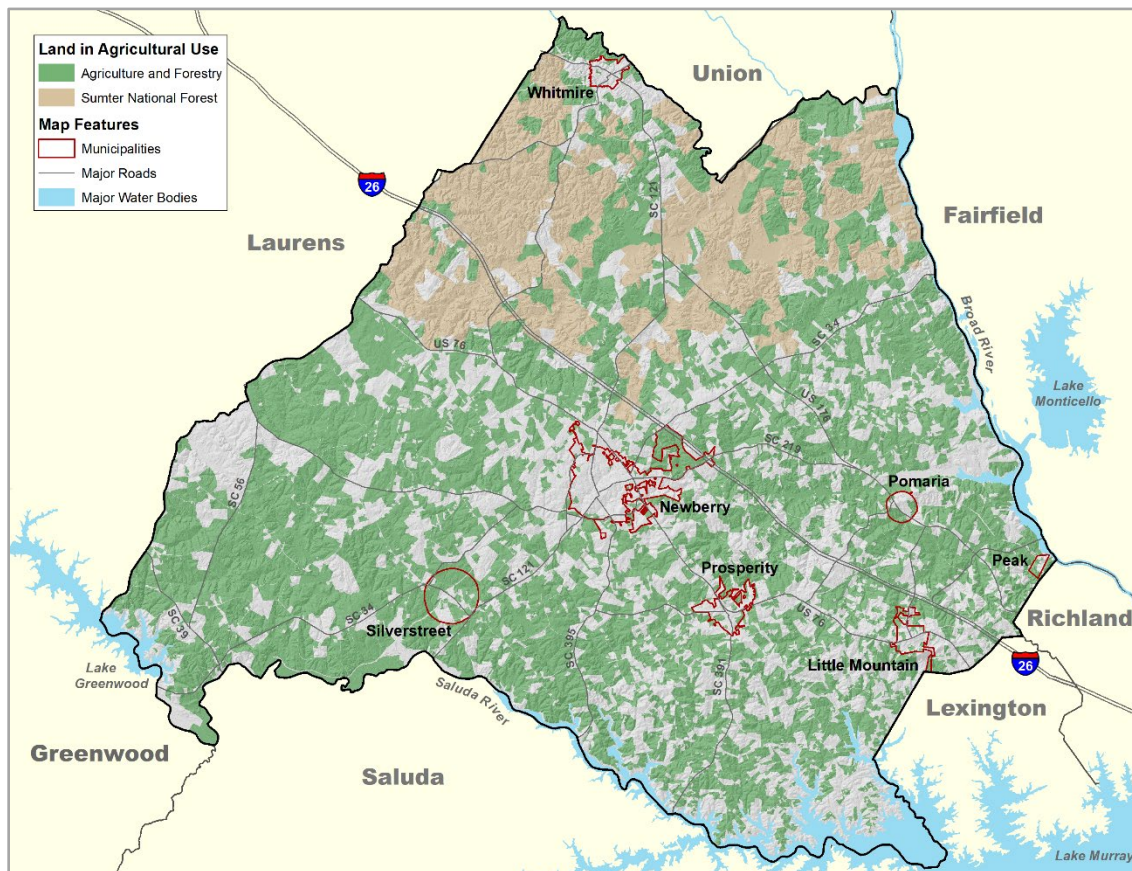




USDA Data reveals that there were 607 farms in Newberry County in 2017 – up from 594 farms in 2012. Conversely, the total area in farms decreased from 104,493 to 98,810 acres and average farm size decreased from 176 acres to 156 acres during the same five-year period. Census data provided in the *2020 County Business Patterns* notes that 245 County residents were employed in agriculture, forestry, and fishing and hunting support services – equating to only 1.9% of employed persons in all economic sectors countywide.

According to Newberry County GIS tax map data, 3,583 parcels totaling 209,682 acres are currently designated and taxed as land in agricultural use in Newberry County (Map 5-5). These parcels range in size from less than one-quarter of an acre to more than 10,000 acres and are located throughout the County. Timber is also harvested in the 57,991 acres of County land included in the Sumter National Forest as part of the ecosystem management of the Forest.

**Map 5-5. Agricultural Lands**



Sources: Newberry County GIS, March 2022

### 5.3.5. Mining

Mineral deposits can be important to the local economy. In South Carolina, these resources range from limestone, phosphate, clay, sand, granite, and vermiculite. There are three active mining operations in Newberry County, all engaged in the mining of sand, clay, and topsoil (*SC Active Mines Viewer, SCDHEC, 2022*). The Lindler's Construction of SC, LLC mining operation is located in the center of the County north of S.C. Highway 34. Green Acres Farm and Construction Company,





Inc. and Metts Construction Inc. operate mines in the eastern area of the County, near the Fairfield County line and near the Town of Little Mountain, respectively.

### 5.3.6. Plant and Animal Habitats

Wildlife habitat is an interrelated and often complex combination of land and soil properties, food sources and vegetative cover, water, and other physical factors that contribute to the survival of a species population. The number, quality, and scope of animal and plant species are directly dependent on the quality and size of their habitat. In turn, habitats are affected directly by natural and man-made factors that include agricultural, residential, industrial, and commercial development, as well as fires and other natural disasters. Habitats declared critical to species identified as endangered or threatened are protected under Federal and State laws to safeguard and promote recovery of the species.

Protective measures for endangered plant and animal species include the development of recovery plans, the acquisition of habitat, and protection from disturbance for listed species. The definition of protection from disturbance differs between endangered plant and animal species. No penalties are incurred if endangered plant species are harmed in the course of legal land management practices. However, the intentional or negligent taking of an endangered animal species or destruction of its critical habitat is subject to prosecution under the *Endangered Species Act*. Destruction of an endangered plant is subject to prosecution under the *Act* if the plant is on federal lands including private land under management practices that require federal permits, or if the destruction occurs during the course of another illegal act such as trespassing.

All states must maintain lists of rare, threatened, and endangered species under the National Heritage program. Species can be included on state lists, while not appearing on the national list, due to declining species populations in certain regions.

Federal and State status denote those species that have formal protections in place by a Federal or state agency or act, or that are under review by the U.S. Fish and Wildlife Service. An *Endangered* species is one in danger of extinction throughout all or a significant portion of its range. A *Threatened* species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The *At-risk Species* classification is given to either a former candidate species or an emerging conservation priority species that is under review or on the agenda for review for designation as endangered or threatened. While a full and current list is available on the SCDNR website, a listing of animal and plant species most at risk based on Federal and State designation is provided in Table 5-4.

The SCDNR has identified and tracks 825 plant and animal species at risk in South Carolina, of which 68 were identified in Newberry County. Of these, the Bald and Golden Eagle is federally protected by the *Bald & Golden Eagle Protection Act*, four species are identified as "Federally At-Risk," and one is "Federally Threatened." The Great Blue Heron and the Great Egret are protected by the federal *Migratory Bird Treaty Act*. SCDNR has identified one species as *State Threatened*, on is *State Endangered*, and three are *Regulated* by the State.



Additionally, the 2015 South Carolina State Wildlife Action Plan (SWAP) identified a list of species with the “greatest conservation need.” As provided in Table 5-4, these are ranked from moderate priority to the highest priority. The Plan describes the status, population, habitat needs, challenges, and conservation accomplishments and actions for each species and allows for identification of the development of both general and species-based conservation strategies.

**Table 5-4. Rare, Threatened, and Endangered Species Inventory, Newberry County**

SPECIES NAME	FEDERAL STATUS	STATE STATUS	SWAP* PRIORITY
American Black Bear; <i>Ursus americanus</i>	NA	NA	Moderate
American Eel; <i>Anguilla rostrata</i>	NA	NA	Highest
American Shad; <i>Alosa sapidissima</i>	NA	NA	Highest
Appalachian Pigmy Pipes; <i>Montropsis odorata</i>	NA	NA	High
Atlantic Spike; <i>Elliptio producta</i>	NA	NA	High
Bald Eagle; <i>Haliaeetus leucocephalus</i>	Bald & Golden Eagle Protection Act	State Threatened	High
Big Brown Bat; <i>Eptesicus fuscus</i>	NA	NA	Highest
Blueback Herring; <i>Alosa aestivalis</i>	NA	NA	Highest
Carolina Darter; <i>Etheostoma collis</i>	NA	NA	High
Carolina Lance; <i>Elliptio angustata</i>	NA	NA	Moderate
Eastern Box Turtle; <i>Terrapene Carolina</i>	NA	Regulated	Moderate
Eastern Creekshell; <i>Villosa delumbis</i>	NA	NA	Moderate
Eastern Elliptio; <i>Elliptio complanate</i>	NA	NA	Moderate
Eastern Lampmussel; <i>Lampsilis radiata</i>	NA	NA	High
Eastern Mud Turtle; <i>Kinosternon subrubrum</i>	NA	Regulated	NA
Eastern Red Bat; <i>Lasiurus borealis</i>	NA	NA	Highest
Fieryblack Shiner; <i>Cyprinella pyrrhomelas</i>	NA	NA	Moderate
Flat Bullhead; <i>Ameiurus platycephalus</i>	NA	NA	Moderate
Four-toed Salamander; <i>Hemidactylium</i>	NA	NA	High
Great Blue Heron; <i>Ardea Herodias</i>	Migratory Bird Treaty Act	NA	Moderate
Great Egret; <i>Ardea alba</i>	Migratory Bird Treaty Act	NA	NA
Greenfin Shiner; <i>Cyprinella chloristia</i>	NA	NA	Moderate
Hickory Shad; <i>Alosa mediocris</i>	NA	NA	Highest
Highback Chub; <i>Hybopsis hypsinotus</i>	NA	NA	Moderate
Highfin Shiner; <i>Notropis altipinnis</i>	NA	NA	Moderate
Kidneyleaf Mup-plantain; <i>Heteranthera reniformis</i>	NA	NA	Moderate
Large Twayblade, Mauve Sleekwort, Russet-witch, Brown Wide-lip Orchid; <i>Liparis liliifolia</i>	NA	NA	Moderate
Lowland Shiner; <i>Pteronotropis stonei</i>	NA	NA	Moderate
May White Azalea, Eastman’s Azalea; <i>Rhododendron eastmanii</i>	NA	NA	High
Mimic Crayfish; <i>Distocambarus carlsoni</i>	At-Risk Species	NA	Highest



SPECIES NAME	FEDERAL STATUS	STATE STATUS	SWAP* PRIORITY
Newberry Burrowing Crayfish; <i>Distocambarus younineri</i>	At-Risk Species	NA	Highest
Notchlip Redhorse; <i>Moxostoma collapsum</i>	NA	NA	Moderate
Oglethorpe Oak; <i>Quercus oglethorpensis</i>	NA	NA	High
Panhandle Pebblesnail; <i>Somatogyryus virginicus</i>	NA	NA	High
Piedmont Darter; <i>Percina crassa</i>	NA	NA	High
Pyramid Magnolia; <i>Magnolia pyramidata</i>	NA	NA	Moderate
Quillback; <i>Carpoides Cyprinus</i>	NA	NA	High
Roanoke Slabshell; <i>Elliptio roanokensis</i>	NA	NA	High
Robust Redhorse; <i>Moxostoma robustum</i>	At-Risk Species	NA	Highest
Rosyface Chub; <i>Hybopsis rubrifrons</i>	NA	NA	Moderate
Rosyside Dace; <i>Clinostomus funduloides</i>	NA	NA	Moderate
Santee Chub; <i>Cyprinella zanema</i>	NA	NA	High
Seagreen Darter; <i>Etheostoma thalassinum</i>	NA	NA	High
Snail Bullhead; <i>Ameriurus brunneus</i>	NA	NA	Moderate
Swallowtail Shiner; <i>notropis procne</i>	NA	NA	Moderate
Thicklip Chub; <i>Cyprinella labrosa</i>	NA	NA	Moderate
Tricolored Bat; <i>Perimyotis subflavus</i>	At-Risk Species	NA	Highest
White Catfish; <i>Ameiurus catus</i>	NA	NA	Moderate
Whorled Horsebalm; <i>Collinsonia verticillata</i>	NA	NA	Moderate
Wood Stork; <i>Mycteria americana</i>	Federally Threatened	State Endangered	Highest
Yellow Lampmussel; <i>Lampsilis cariosa</i>	NA	NA	Highest

\*S.C. State Wildlife Action Plan (SWAP)

Source: S.C. Department of Natural Resources, July 2020

### 5.3.7. Parks and Open Space

Newberry County residents and visitors are fortunate to have access to numerous and diverse land and water opportunities for outdoor recreation. These resources include the Sumter National Forest, two State parks, a State wildlife management area, 46 public parks and recreation facilities, seven public County boat ramps, and nature and hiking trails. Water resources include two major lakes, four rivers, and numerous ponds and streams. Locations of the County's major outdoor recreation resources are shown on Map 5-6.

#### 5.3.7.1. Sumter National Forest

Located within the northeastern area of Newberry County are 57,991 acres of the 370,442 acre *Sumter National Forest* – one of only two national forests in South Carolina. The Newberry portion of the Forest is within the 161,216 acre Enoree Ranger District – one of three ranger districts statewide. The District encompasses land throughout Chester, Fairfield, Laurens, Newberry, and Union Counties. Established in 1936 by presidential proclamation, the National Forest lands were



acquired in part to retire sub-marginal farmland, control soil erosion, regulate stream flow, and grow timber.

The Civilian Conservation Corps (CCC) established several camps in the Forest and built fire towers, roads, recreation areas, a tree nursery, a fish hatchery, and trails. Many of these improvements are still in use. The Forest provides a wide range of outdoor activities including paddling or fishing on one of the three rivers that flow through the District. Other activities include camping; bird watching; picnicking; hiking or horseback riding on the 133 miles of trails; hunting and target shooting; and enjoying the beauty of the area including several waterfalls.

The Forest is managed by the U.S. Forest Service for multiple purposes including timber production, recreation, and conservation. Approximately 14.6% of County land is owned and managed by the Forest Service. Much of the forest is designated as a Wildlife Management Area, allowing hunting under SCDNR regulations. A listing of the major Sumter National Forest recreation resources in the Newberry County area is included in Table 5-5. The location of each resource is shown on Map 5-6.

**Table 5-5. Sumter National Forest Recreation Sites in/near Newberry County**

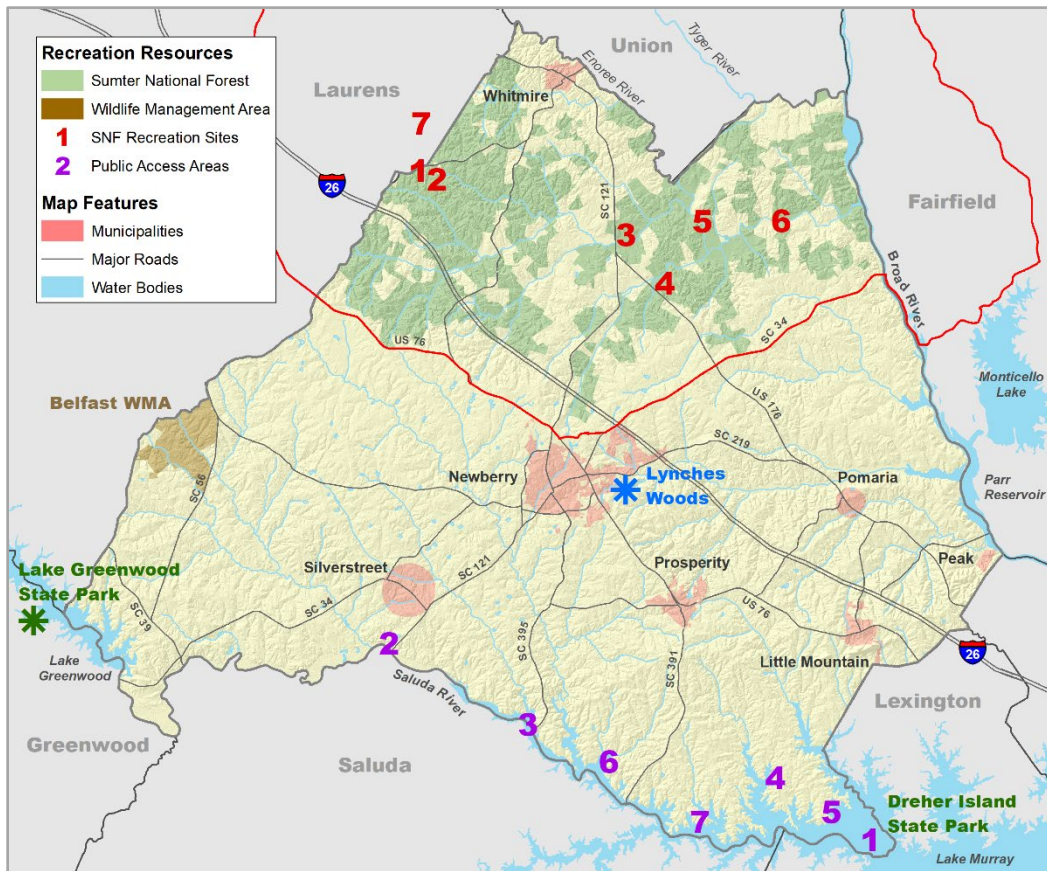
MAP LOCATION	FACILITY NAME	FACILITIES
1	Brick House Campground	Year round facility with 21 campsites with tables, grills and lantern holders; 8 extended stay campsites during hunting season; restrooms
2	Buncombe Trail Head	Access to 31.5 mile Buncombe horse trail and the 36 mile Enoree Passage of the Palmetto Trail (14 miles in Newberry County) – shared to Indian Creek; access to Brick House Campground; parking lot
3	Indian Creek Rifle Range	ADA accessible; six shooting tables; backstops placed at 35 and 100 yard intervals; parking lot
4	Molly's Rock Picnic Area	Self-guided interpretive trail, small stocked pond and fishing pier, picnic shelter and tables, fireplace, restrooms, drinking water, large open area for play
5	Brazelman's Bridge Boat Ramp	Boat ramp access to the Enoree River on SC 81 at Brazelman's Bridge; restrooms
6	Keitt's Bridge Boat Ramp	Boat ramp access to the Enoree River on SC 45 at Keitt's Bridge; restrooms
7	Enoree Off Highway Vehicle Trail (in Laurens County)	14.4 mile trail for all terrain vehicles and dirt bikes only; parking; loading/unloading ramp; restrooms

*Source: USDA Forest Service, Enoree Ranger District, July 2022*





Map 5-6. Federal, State, and Other Recreation Resources



Sources: Dominion Energy, 2022; USDA Forest Service, 2022; SCDNR, 2022

### 5.3.7.2. State Parks

The 348-acre *Dreher Island State Park*, located near the southern tip of Newberry County, includes three islands and 12 miles of shoreline on Lake Murray (Map 5-6). The park land is leased to the S.C. Department of Parks, Recreation and Tourism (SCPRT) by Dominion Energy. Originally used for training exercises by the Army Air Corps in the 1940s, the State Park is open year-round and includes 12 sheltered picnic areas, three fishing tournament shelters, a community building, three playgrounds, a 0.3-mile nature trail, a 0.3 mile hiking and mountain biking trail, a 2.1-mile hiking trail, three boat ramps, rental boat slips, ten camper cabins, and five lakeside villas. Recreational vehicle and tent camping is accommodated in designated camping sites.

The Park's two lakefront camping areas provide scenic views and easy access to Lake Murray. Recreational vehicles and tents have access to 97 paved camping sites, with an additional 15 sites available for tent camping only. Dreher Island State Park is the only public site on Lake Murray that provides formal camping facilities. Individuals may also camp on islands owned by Dominion Energy and other lands such as Bundrick Island and River Bend Point in Lexington County, and Sunset Road Recreation Area on Hollands Landing Road in Newberry County for a maximum of seven consecutive days.

*Lake Greenwood State Park* is located near the southwestern corner of Newberry County. Built in 1938 by the Civilian Conservation Corps as one of 16 parks statewide, the Park still exhibits



evidence of the CCC craftsmanship in two picnic shelters, the retaining wall at the lake, a boathouse, and a water fountain. The 914-acre park encompasses five peninsulas that provide abundant shoreline for lakeside camping, fishing, and boating, and the only public beach access available to Lake Greenwood. Included in the park are a fishing pier, two boat ramps, 125 paved campsites, a 0.8-mile nature trail, four picnic shelters, and a conference center.

### **5.3.7.3. Wildlife Management Area**

The S.C. Department of Natural Resources (SCDNR) owns and manages Wildlife Management Areas (WMA) that play a critical role in conserving fish, wildlife, and other natural resources. SCDNR leases approximately 1.2 million acres of public and private land for wildlife conservation and management purposes. Appropriate and compatible uses of these protected areas include hunting, fishing, wildlife observation and photography, environmental education, and environmental interpretation. There are two types of properties in the WMA program – those that are specifically-named WMAs and unnamed “Other” WMAs. Other WMA lands are scattered tracts that are often leased from private landowners and the forestry industry.

As the only named WMA in Newberry County, the *Belfast Wildlife Management Area* is a 6,505-acre tract located 10 miles northwest of Newberry on S.C. Highway 56 near the Kinards community (Map 5-6). Although the Belfast WMA is situated on the county line between Newberry and Laurens, much of the land area is within Newberry County. Belfast is owned and managed by SCDNR. The Belfast WMA is open to the public for bird watching, hunting, nature walking, and bicycling and includes an historic plantation that dates back to 1786. An archery range is also available for public use.

There are also numerous unnamed “Other” WMA properties in Newberry County, all located within the Sumter National Forest. These lands include, but are not limited to, all *Sumter National Forest* lands as depicted on Map 5-6. These unnamed “Other” WMA properties provide additional hunting opportunities during designated seasons and as regulated by SCDNR.

### **5.3.7.4. Lakes and River Recreation Resources**

*Lake Murray*, a 50,000 acre man-made lake, was completed in 1930 to provide hydro-electric power as well as recreational opportunities to the Midlands of South Carolina. The Lake is located southeast of the City of Newberry and extends into the southeastern portion of Newberry County. The Lake is 41 miles long and over 14 miles at its widest point, with more than 500 miles of shoreline. Public access in Newberry County is available at Sunset Road, Higgins Bridge on S.C. Highway 121, Kempson Bridge on Highway 395, Macedonia Church, and at Dreher Island State Park. Additional Dominion Energy recreation sites are planned for locations at the Big Creek and Simpsons Ferry sites. Table 5-6 lists current and future Dominion public access sites on Lake Murray in Newberry County. Each site is shown on Map 5-6.

Numerous public marinas dispersed around Lake Murray provide boat ramps and launching facilities, fuel services, groceries, boat sales, boat rentals and repairs, bait and tackle, and boat storage. The Lake is widely known for its excellent fishing and sailing opportunities and hosts a number of local and national fishing tournaments and regattas each year. Many of the fishing tournaments are hosted at Dreher Island State Park. Lake Murray was recognized as the number



one “Best Southeastern Bass Lake” and ranked fourth in the annual “100 Best Bass Lakes Revealed” list by Bassmaster Magazine in their July/August 2023 issue.

**Table 5-6. Dominion Public Access Areas – Lake Murray and Saluda River**

MAP #	RECREATION SITE	SIZE	SHORELINE	FACILITIES
<b>CURRENT RECREATION SITES</b>				
1	Billy Dreher Island	348.0 acres	12 miles	Camping, boat ramps, walking trails, fishing docks, slips, bait and tackle, gas, restrooms
2	Higgins Bridge	1.1 acres	375 feet	Boat ramp, courtesy dock
3	Kempson Bridge	2.9 acres	600 feet	Boat ramp, courtesy dock
4	Sunset	2.3 acres	640 feet	Fishing dock, courtesy dock, boat ramp, parking
5	Macedonia Church	4.8 acres	2,491 feet	Picnic shelters and tables
<b>FUTURE RECREATION SITES</b>				
6	Big Creek	22.3 acres	2,613 feet	n/a
7	Simpson’s Ferry	11.6 acres	3,247 feet	n/a

Source: Dominion Energy, July 2022

*Lake Greenwood* is an 11,400 acre man-made lake located to the southwest of the City with a portion that extends into southwestern Newberry County. Lake Greenwood provides several miles of scenic shoreline within Newberry County. The Lake is one of eleven major lakes in South Carolina and was completed in 1940 following the construction of the dam at Buzzard’s Roost on the Saluda River. The Lake is owned and managed by Greenwood County as a public waterway and is designated by the Army Corps of Engineers as a navigable waterbody. The State of South Carolina is the governing authority for docks, revetments, seawalls, and other structures that are placed within the boundary of Lake Greenwood. Public access to Lake Greenwood is available at the public fishing access area located below the Buzzards Roost Hydroelectric Dam on S.C. Highway 34 in Newberry County and in nearby Lake Greenwood State Park.

The *Lake Greenwood Master Plan* was created in 2015 to establish goals, objectives, and strategies for the use, development, and protection of the Lake area through 2035. The Master Plan was the culmination of nearly a year of study by staff, elected and appointed officials, and citizens from Greenwood, Newberry, and Saluda counties and provides guidelines to assist the elected and appointed officials, staff, citizens, land developers, and agencies in decision-making.

In 1914, the *Broad River* was dammed in order to produce electricity at Parr Shoals. The *Parr Reservoir* is a 4,400 acre man-made lake on the eastern border of Newberry County that is operated by Dominion Energy. Access to the Broad River and the Parr Reservoir is available at the Heller’s Creek and Cannons Creek crossings of Broad River Road, with a boat ramp and picnic area provided at both sites.

In addition to the two lakes, Newberry County is bounded in part by the scenic Saluda, Tyger, and Enoree Rivers. A public boat ramp accessing the *Saluda River* is located at Higgin’s Bridge just off Highway 121 south of Silverstreet. The Sumter National Forest maintains two boat ramps with restrooms on the *Enoree River* – one located at Brazelman’s Bridge Road and another at Keitt’s



Bridge on Maybinton Road. Public boat access to the *Tyger River* is provided at Beatty's Bridge and Rose Hill, both in neighboring Union County.

#### **5.3.7.5. Public Parks and Open Space**

There are 46 public parks and recreation facilities encompassing more than 694 acres in Newberry County. The County's recreation resources accommodate a range of outdoor activities such as picnicking and enjoying the outdoors; tracks and trails for walking or jogging; fields for baseball, softball, and soccer; courts for basketball, tennis, volleyball, and horseshoes; and golf and disc golf courses. While most park and recreation facilities in Newberry County are owned and managed by municipalities, Lynch's Woods in the City of Newberry is owned and managed by Newberry County. Of particular note is the 128 acre Newberry Recreation Complex in the City of Newberry, completed in 2020, that includes a splash park, a 4.75 acre pond, half-mile nature trail, playground, three baseball/softball fields, two multi-purpose fields, picnic tables, ping pong tables, and outdoor fitness equipment. A listing of the parks and associated resources within the County, including size and amenities provided at each site, is detailed in the *Community Facilities Element*.

As one of only 16 cross-state trails in the United States, the *Palmetto Trail* is a federally designated *Millennium Legacy Trail*. The Palmetto Trail is South Carolina's longest pedestrian and bicycle trail, with 27 passages totaling 350 miles through 14 counties completed to date. Passages range from 1.3 miles to 47 miles in length. When completed, the route will extend 500 continuous miles from Oconee County to the Intracoastal Waterway. The trail was established in 1994 to provide free access to trails of all levels of difficulty and varying length. The entire trail is open to hiking and backpacking, with designated passages available for mountain biking, horseback riding, and camping. Four sections of the Palmetto Trail are open in Newberry County.

The *Lynches Woods Passage*, located in Lynch's Woods Park, is a 4.9-mile trail located in the southeastern area of the City of Newberry behind the Newberry County Sheriff's complex on U.S. Highway 76. The 260-acre woodland area officially opened to the public in 1940 and is owned by Newberry County and managed by the Newberry County Soil and Water Conservation District. A 4.9 mile scenic trail accommodates hiking, mountain biking, and horseback riding. Park facilities include a sheltered picnic area, restrooms, and two primitive campsites. The Trail provides a connection to the Newberry Passage that takes users through downtown Newberry and along the Newberry College campus.

The 10.7-mile *Newberry Passage* travels down Main Street in the City of Newberry, loops around the square, and runs north along College Street and Old Whitmire Highway before tying into the 36-mile *Enoree Passage* in the Sumter National Forest. The Passage is an urban trail that travels through the historic downtown district and business area in the City of Newberry before transitioning to the wooded Lynches Woods passage.

The *Peak to Pomaria Passage* is a 10.7 mile trail that extends from the Fairfield County line across the 1,100 foot Broad River trestle to the towns of Pomaria and Peak in Newberry County. Palmetto Conservation purchased the 11-mile, 200-foot wide right-of-way for the Passage from Norfolk South Railroad. Access to the Passage is provided at the Alston Trailhead in Fairfield County and the Pomaria, Hope Station, and Koon Trestle trailheads in Newberry County.





In addition, a fourteen-mile trail section of the *Enoree Passage* of the Palmetto Trail begins at Brickhouse Campground (off of S.C. Highway 66 west of Whitmire) in the Sumter National Forest.

#### 5.3.7.6. Unique Scenic Views and Natural Areas

Unique scenic views and natural areas abound in Newberry County, provided in large part by the Saluda, Broad, Tyger, and Enoree Rivers as well as Lake Murray, Lake Greenwood, and the Parr Reservoir. Many of the abundant natural resources available within the Sumter National Forest are readily accessible to Newberry County residents, providing many opportunities to enjoy unique and beautiful vistas and natural areas associated with area woodlands, rivers, and waterways. Table 5-7 provides a listing of unique scenic views and natural areas in Newberry County and its municipalities.

**Table 5-7. Unique Scenic Views and Natural Areas in Newberry County**

SITE	LOCATION	DESCRIPTION
Molly's Rock	Sumter National Forest (Newberry County)	Massive granite boulder known locally as Molly's Rock. Molly's Rock Picnic Area, built on the site of an old homestead, is located at this site.
Henderson Island	Northernmost point of the County's western boundary (Newberry County)	Island created by the Broad River
Tea Table Rock	Old Whitmire Highway (Newberry County)	Granite outcropping and site of British encampment during the Revolutionary War
Rocky Branch	At eastern base of Little Mountain on eastern side of Billy Dreher Island Road (Town of Little Mountain)	44 acres of upper Piedmont lands with a mountain stream and waterfall and more than 350 species of flora and fauna
Reunion Springs-Mountain Site and Trail	Reunion Drive just south of Little Mountain Elementary School (Town of Little Mountain)	Natural spring area produced by geological faults on the mountain. The site of Little Mountain Reunion gatherings since 1882 and earlier Lutheran gatherings. Trail head of the Mountain Trail that leads to the middle peak of Little Mountain and the overlook view.
Overlook Area	Just west of old AT&T relay station, at terminus of Mountain Trail (Town of Little Mountain)	Unparalleled views of the Little Mountain and Lake Monticello areas. Offers unrestricted views that extend beyond Prosperity and the "eggoid" water tank on S.C. Hwy 34 and to the northwest along I-26 for approximately 14 miles from Little Mountain.
Greenway Park and Trail	Along the course of Scotts Creek (City of Newberry)	Follows the course of Scott's Creek as it winds through Willowbrook Park and the historic West End neighborhood between Drayton and O'Neal Streets, providing connectivity to the downtown.
Wells Japanese Garden	Behind City Hall on Lindsay Street at its intersection with Wells Garden Circle (City of Newberry)	Small, landscaped park donated to the City in 1971, with a variety of indigenous and exotic flora in a landscaped setting, ponds, and a Japanese tea house. Listed in the National Register of Historic Places in 1980.



SITE	LOCATION	DESCRIPTION
Lynch's Woods	Southeastern area of the City behind Piedmont Technical College on U.S. Hwy 76 (City of Newberry)	260-acre woodland tract with scenic views and natural areas in a virtually pristine upland forest. Includes a scenic road; 7.5 miles of hiking and mountain biking trails, 3.5 miles of equestrian trails, and picnic areas.
Dr. Carroll S. Pinner Bridge	S.C. Highway 213 at Broad River (Town of Peak)	Named for a Peak doctor, this bridge carries S.C. Highway 213 over the Broad River.
Peak Rail Bridge	Palmetto Trail crossing of the Broad River (Town of Peak)	Railroad trestle built in 1904 across the Broad River, recently converted for pedestrian and bicycle use as part of the Peak-to-Prosperity portion of the Palmetto Trail.

### 5.3.7.7. Land Conservation

The preservation and conservation of Newberry County's abundant and unique land resources is key to the quality of life for residents, agricultural production, and tourism and economic development. Conservation and protection of much of the County's resources is carried out by Federal, State, and local agencies through outright purchase and conservation easements. A conservation easement is a voluntary contract between a landowner and a qualified land trust or public entity that allows the landowner to legally restrict certain land uses such as subdivisions, commercial or industrial operations, or mining from occurring on their property while allowing traditional rural uses such as farming, grazing, hunting, and timbering to continue. The easement is permanent and remains with the land after it has been sold or conveyed to heirs. Organizations that are working to conserve and preserve land in Newberry County include the South Carolina Conservation Bank and the Newberry Soil and Water District.

The mission of the *South Carolina Conservation Bank* is "to improve the quality of life in South Carolina through the conservation of significant natural resource lands, wetlands, historical properties, archeological sites, and urban parks." The Bank is considered one of the State's most important land protection tools and a key funding source for land conservation statewide. Since its inception in 2002, the Bank has issued \$173 million in grant awards for 345 projects and protected nearly 329,000 acres of land throughout the State. Funding for the Bank is provided by a portion of the real estate transfer fee. The Bank provides grants for woodlands/wetlands, farmlands, urban parks, and historical and archaeological sites through a competitive grant application process. Funding from the Bank has been used to conserve two tracts totaling more than 2,611 acres in Newberry County. *Belfast Plantation – Phase 1* is a 2,220 acre tract in the western area of Newberry County with almost 10 acres of frontage on Little River and other tributaries and includes an historic house onsite. The Belfast tract is part of the 4,664 acre Belfast Wildlife Management Area (Map 5-6) and is largely a timber tract managed by SCDNR. Acquisition of a 16,000 acre adjoining tract is planned, with both listed as a top priority for SCDNR.

The 391 acre *Comalander Tracts* are located in the northern area of the County adjacent to the Enoree River. The Tracts are managed for wildlife, agriculture, and forestry and include a diversity of animal and plant habitats such as white-tailed deer, wild turkey, waterfowl, otter, beaver, bobcat, fox, and black bear.



The *Heritage Trust Program* of SCDNR has preserved and protected natural and cultural properties throughout the State since 1974. Heritage Trust staff work with related agencies to identify and document rare plants, animals, archaeological sites, and other significant features of South Carolina's heritage. This information is used to determine the locations that have the most conservation potential. One of the program goals is to permanently protect the best examples of these features through a system of heritage preserves. These preserves are managed to sustain or improve habitat for species that are already on the property, those that may return to the area, and species that may colonize the area following improvement. SCDNR sets and regulates the methods of harvest, bag limits, and other hunting requirements in wildlife management areas. While the *Sumter National Forest* is owned by the U.S. Forest Service, it is managed in a cooperative partnership with SCDNR and is considered a Heritage Preserve.

The *Newberry Soil and Water Conservation District (NSWCD)* is a local governmental agency responsible for matters involving resource conservation in Newberry County. It promotes the wise and responsible use of natural resources through the development and implementation of programs to protect and conserve soil, water, farmland, woodland, wildlife, energy, and riparian and wetland resources. NSWCD promotes conservation practices through long-range planning, information distribution and public education, working with legislators to promote the best interests of landowners, and promotion of conservation practices and resources through the media. The District was named the South Carolina Outstanding Soil and Water Conservation District of the Year in 2021.

## 5.4. Water Resources

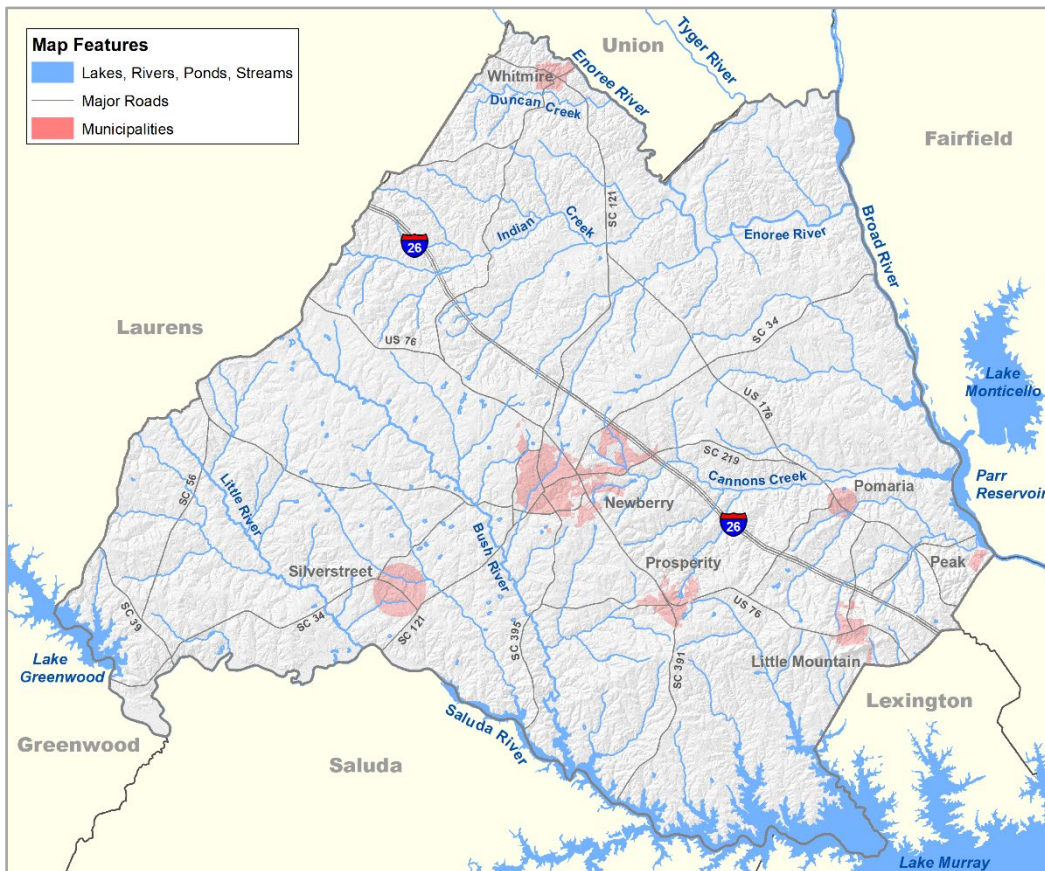
Water quality and availability are key factors in future local and regional development efforts. Newberry County relies extensively on surface water from local sources for residential, commercial, and industrial uses.

### 5.4.1. Surface Water

Newberry County has an abundance of surface water, generally sustained by ample rainfall, that includes several major water bodies as well as numerous rivers, creeks, ponds, and streams. Surface water accounts for nearly all (98.1%) of the public water supply in Newberry County, with 84,965.4 million gallons withdrawn in 2020 (*Water Use in South Carolina, SCDHEC, 2020*). Surface water and groundwater supply and treatment, including facilities, are detailed the *Community Facilities Element*. Map 5-7 shows surface water resources in Newberry County.



Map 5-7. Newberry County Surface Water



Sources: Newberry County GIS, 2022; SCDNR Data Clearinghouse, 2022

Newberry County is bordered by two major rivers – the Broad River to the east and the Saluda River to the southwest. Several smaller rivers including Bush River and the Enoree River either border or flow within its borders. Lake Murray and Lake Greenwood are two major man-made lakes that comprise much of the southern border of the County. The Parr Reservoir forms a portion of the western boundary of the County.

The Saluda River and the Broad River are both principal tributaries of the Congaree River, which is part of the watershed of the Santee River that flows to the Atlantic Ocean. The *Saluda River* is formed about 10 miles northwest of the City of Greenville, on the common boundary of Greenville and Pickens Counties and flows generally southeastwardly through the Piedmont region. The *Broad River* originates in the Blue Ridge Mountains of eastern North Carolina and flows generally south-southeasterly, through northern and central South Carolina, passing through the Sumter National Forest along the way. The Saluda and Broad Rivers join in Columbia to form the Congaree River.

While the three major lakes that border Newberry County were constructed for the primary purpose of hydroelectric power generation, they also provide some flood control by reducing the severity of peak flood flows, are reliable sources of water, and provide abundant recreational opportunities for area residents and visitors.





Created by the damming of the Saluda River by SCE&G in 1930, *Lake Murray* is the 3<sup>rd</sup> largest lake in the state by volume at 2,114 million acre-feet, with a surface area of 51,000 acres at full pool and a drainage area of approximately 2,420 square miles. Also impounding the Saluda River, *Lake Greenwood* is the 12<sup>th</sup> largest lake by volume statewide at 270,000 acre-feet, with a surface area of 11,499 acres, and a drainage area of approximately 1,170 square miles. The lake is owned by Greenwood County and Santee Cooper operates the associated Buzzards Roost hydroelectric plant. The Broad River was dammed in 1914 to produce electricity at Parr Shoals, resulting in the creation of the *Parr Reservoir*. The Reservoir has a surface area of 4,400 acres at its maximum level and a drainage area of 4,750 acres and is linked to the 7,100-acre Monticello Reservoir in Fairfield County via a pumped storage hydroelectric facility.

#### 5.4.2. Groundwater

Groundwater is a significant source of drinking water, particularly in rural areas, and an important source of water for manufacturing, agricultural irrigation, and power generation. Groundwater is also vital for maintaining aquatic ecosystems by recharging streams, lakes, and wetlands and sustaining surface water supplies during droughts. The *S.C. Water Plan* estimates that 60% of the water in South Carolina streams originates as groundwater.

Groundwater supplies are subject to seasonal variation and decline due to prolonged drought, but usually to a lesser degree than surface water supplies. Groundwater levels are lower during the summer due to increased pumping and reduced recharge, but usually recover during the winter and spring because of increased aquifer recharge and reduced pumping. Multi-year droughts lower aquifer water levels by limiting the recharge that normally occurs during the wet winter and spring months.

SCDHEC, SCDNR, and the South Carolina Water Science Center (SCWSC) of the U.S. Geological Survey (USGS) have cooperatively developed and are maintaining groundwater level monitoring networks within the major aquifers of the State. SCDNR routinely collects groundwater level data for 180 wells statewide. Water-level data are used to identify changes in groundwater levels, calibrate groundwater flow models, produce maps, access aquifers, monitor droughts, and assist in groundwater management and planning. While SCDNR has no monitored wells in Newberry County, an aquifer in nearby Saluda County is monitored on a quarterly to bi-monthly basis (*South Carolina Hydrology, SCDNR, 2022*). The well is also equipped to participate in the SCDNR Groundwater Drought Monitoring Network.

#### 5.4.3. River Basins and Watersheds

The precipitation that falls in South Carolina is drained by four major river systems – the Pee Dee, Santee, Ashley-Combahee-Edisto, and Savannah River Basins. The streams and rivers that drain each region serve as drainage basins that generally traverse the State from the northwest to the southeast. The distribution of these systems is a key factor in the geographic disparity in water supply and demand that exists among regions.

Newberry County is located in the greater Santee River Basin, which includes the Cooper, Santee, Congaree, Catawba-Wateree, Broad, and Saluda Rivers. The Basin drains more than one-third (34%) of the State's surface water at a rate of 7.5 billion gallons per day (*2005 Comprehensive*

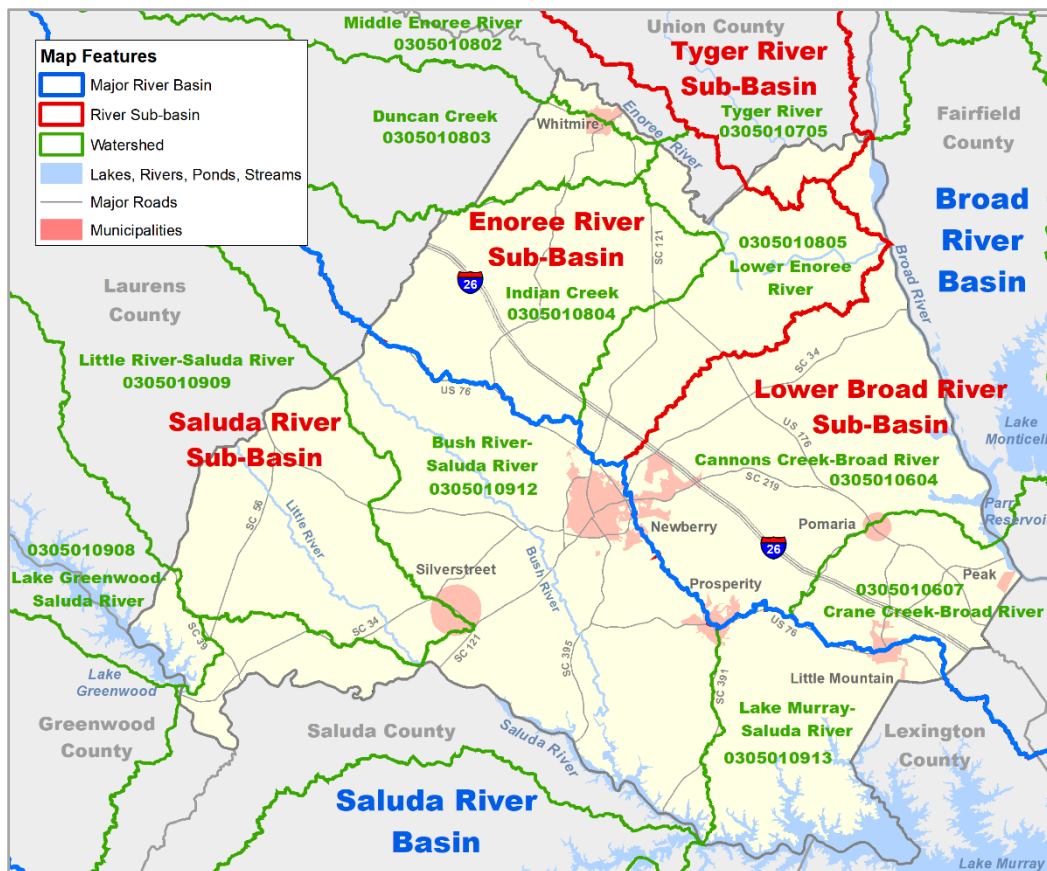


*Wildlife Conservation Strategy, SCDNR*). The Santee River Basin originates in North Carolina and is the second largest Atlantic watershed in the eastern United States, draining approximately 15,700 square miles of land, of which 10,400 square miles are in South Carolina (*North Carolina Rivers, Facts, Legends and Lore, Hair, 2007*). The major Santee River Basin is further divided into the Broad, Catawba, Congaree, Saluda, Santee, and Wateree basins.

Newberry County is almost evenly split between the *Saluda River Basin* in the south and the *Broad River Basin* in the north (Map 5-8). The northern half of the County within the Broad River Basin includes the Broad, Enoree, and Tyger Rivers. The Broad River Basin encompasses 2.4 million acres, including approximately 4,332 stream miles and 18,532 acres of lake waters (*SCDHEC, 2008*). The Broad River Basin is further split into the Enoree River, Tyger River, and Lower and Upper Broad River sub-basins.

The southern half of the County is within the Saluda River Basin, which extends across the Blue Ridge, Piedmont, Sandhills, and Upper Coastal Plain regions of the State. The Saluda River Basin covers 2.1 million acres and includes the Oolenoy, Reedy, Saluda, Little, Bush, and Congaree Rivers. There are approximately 3,490 stream miles and 67,999 acres of lake waters in the Saluda River Basin (*SCDHEC, 2008*). The Saluda River Basin includes only the Saluda River Sub-basin.

Map 5-8. River Sub-Basins and Watersheds



Source: SCDHEC, SC Watershed Atlas, July 2022

A watershed is a geographic area into which the surrounding waters, precipitation, sediments, and dissolved materials drain and flow to a single outlet. Watershed resources include both



groundwater and surface water, making watershed protection vital to preserving water quality. As water flows across or under a watershed on its way to a lake, river, or stream, it is exposed to potential contaminants in the form of stormwater runoff and other pollutants. Development of natural areas can adversely impact water quality through the replacement of vegetation and forests with impervious surfaces. The State's major river basins encompass 185 ten-digit watersheds.

Newberry County is impacted by eleven watersheds – five in the Enoree River Sub-basin, two in the Lower Broad River sub-basin, one in the Tyger River sub-basin, and four in the Saluda River Sub-basin (Map 5-8). Detailed watershed data including the impacted counties, primary water bodies, and coverage area is included in Table 5-8.

**Table 5-8. Watersheds in Newberry County**

WATERSHED	COUNTIES	PRIMARY WATERBODIES	AREA (ACRES)	STREAM MILES	LAKE/POND WATERS (ACRES)
<b>BROAD RIVER BASIN</b>					
<b>Enoree River Sub-basin (03050108)</b>					
<b>Middle-Enoree River</b> (305010802)	Newberry, Spartanburg, Laurens, Union	Enoree River and its tributaries from Beaverdam Creek to Duncan Creek	118,753.7	480.0	535.1
<b>Duncan Creek</b> (305010803)	Laurens, Newberry	Duncan Creek and its tributaries	76,797.7	305.9	278.3
<b>Indian Creek</b> (305010804)	Newberry, Laurens	Indian Creek and its tributaries	62,020.8	263.1	169.6
<b>Lower Enoree River</b> (305010805)	Newberry, Laurens	Enoree River and its tributaries from Duncan Creek to its confluence with the Broad River	43,329.7	184.5	92.0
<b>Lower Broad River Sub-basin (03050106)</b>					
<b>Cannons Creek-Broad River</b> (305010604)	Newberry, Fairfield	Broad River and its tributaries from the Tyger River to the Parr Shoals Dam	146,310.3	570.0	10,068.2
<b>Crane Creek-Broad River</b> (305010607)	Newberry, Fairfield, Richland	Broad River and its tributaries from the Parr Shoals Dam to its confluence with the Saluda River	148,712.6	612.5	1,563.2
<b>Tyger River Sub-Basin (03050107)</b>					
<b>Tyger River</b> (305010705)	Newberry, Spartanburg, Union	Tyger River and its tributaries	156,705.5	651.0	584.9



WATERSHED	COUNTIES	PRIMARY WATERBODIES	AREA (ACRES)	STREAM MILES	LAKE/POND WATERS (ACRES)
<b>SALUDA RIVER BASIN</b>					
<b>Saluda River Sub-Basin (03050109)</b>					
<b>Lake Greenwood-Saluda River</b> (305010908)	Anderson, Greenville, Abbeville, Laurens, Greenwood, Newberry	Saluda River and its tributaries from Big Creek to the Lake Greenwood Dam	182,718.66	594.3	9,594.5
<b>Little River-Saluda River</b> (305010909)	Laurens, Newberry	Little River and its tributaries	147,234.36	501.6	459.9
<b>Bush River-Saluda River</b> (305010912)	Laurens, Newberry, Saluda, Greenwood	Saluda River and its tributaries from Lake Greenwood to the Lake Murray headwaters	182,691.08	668.9	3,797.0
<b>Lake Murray-Saluda River</b> (305010913)	Newberry, Saluda, Lexington, Richland	Saluda River and its tributaries from the Lake Murray Headwaters to the Dam	165,328.11	325.6	43,766.0

Source: SCDHEC, SC Watershed Atlas, July 2022

#### 5.4.4. Water Quality

South Carolina's abundant water supply has proven a key resource in the development and growth of the State's economy. The quality of this water supply is integral to future community and regional development efforts and the health and safety of residents depends on the quality of these resources. While overall water quality has been good in most parts of the State, increased urbanization and a growing population contribute to rising levels of point source and non-point source pollution. Sustained growth will place greater demand on the water supply and make the protection of water resources a long-term priority.

Section 208 of the *Federal Clean Water Act*, as passed in 1972 and amended in 1987, establishes an area-wide approach to addressing surface water quality protection. The Act provides criteria for local plan design based upon a comprehensive and integrated approach to water pollution abatement within a regional context. The State of South Carolina continues to use regional planning agencies throughout much of the State as a means of administering these requirements. In 1975, the Governor designated the Central Midlands Council of Governments (CMCOG) as the area-wide water quality management planning agency for the Columbia metropolitan and Lake Murray area.

The CMCOG is responsible for updating and amending the Water Quality Management Plan (WQM) for the five-county region that includes Newberry County. This responsibility includes recommending needed wastewater collection, transport, and treatment systems, as well as reviewing all wastewater-related projects proposed for construction in the region to include systems for residential, commercial, and industrial development. The most recent update of the





208 *Water Quality Management Plan* for the Central Midlands Region was developed and adopted by the CMCOG in 1997. The CMCOG is currently updating the Plan, with completion anticipated in 2023. The CMCOG relies on designated Management Agencies to implement the Plan within its designated management area. The City of Newberry is the designated Management Agency for its area, and the Newberry County Water and Sewer Authority (NCWSA) is the designated Management Agency for the remainder of the County, with the exception of the area managed by the Town of Whitmire.

The SCDHEC Bureau of Water has developed a *Watershed Water Quality Assessment* for each major river basin in the State. Updates to the river basin assessments are maintained online in the *South Carolina Watershed Atlas*. While more complete assessments of local water quality are included in the SCDHEC data, pertinent findings for Newberry County water quality are summarized in this subsection.

Statewide standards have been established to protect the suitable uses indicated in each classification and to maintain and improve water quality. The standards determine permit limits for treated wastewater discharge and any other activities that may impact water quality. All waters in the Newberry area are classified as Fresh Water by SCDHEC (*S.C. Watershed Atlas, 2022*). Per SCDHEC *Regulation 61-68 – Water Classification and Standards*, fresh waters are suitable for primary and secondary contact recreation (swimming, water skiing, boating, and wading), for industrial and agricultural uses, and as sources of drinking water supply after conventional treatment. Fresh waters are also suitable for fishing and provide a suitable environment for the survival and propagation of a balanced aquatic community of flora and fauna.

#### **5.4.4.1. NPDES Permitted Activities**

As authorized by the *Clean Water Act of 1972*, the National Pollutant Discharge Elimination System (NPDES) permit program reduces water pollution by regulating point sources that discharge pollutants into waters. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge are exempt from NPDES permitting. However, industrial, municipal, and other facilities must obtain permits to discharge directly into surface waters. Accordingly, discharges from wastewater treatment systems owned by governments, private utilities, and industries are required to obtain NPDES permits.

Wastewater facilities are monitored by SCDHEC regional offices of Environmental Quality Control for compliance with NPDES permits. SCDHEC issues permits for municipal facilities (municipal utilities), domestic facilities (private utilities), and industrial facilities (industrial pump and haul operations that generate non-hazardous process wastewater and domestic wastewater generated at industrial facilities). Table 5-9 lists active permitted NPDES facilities in Newberry County, sorted by type of activity. Watershed references in Table 5-9 correspond to those provided in Map 5-8.



Table 5-9. NPDES Active Permitted Facilities in Newberry County

FACILITY NAME	WATERSHED	DESCRIPTION (SIC)
<b>DOMESTIC</b>		
NCW&SA/Newberry Shores	305010913	Sewerage Systems
<b>MUNICIPAL</b>		
NCW&SA/Cannons Creek Wastewater Treatment Plant	305010604	Sewerage Systems
Whitmire, Town of	305010803	Sewerage Systems
NCW&SA/Bedford Way	305010913	Sewerage Systems
Newberry Water Treatment Plant	305010912	Water Supply
<b>INDUSTRIAL</b>		
Archer Western Construction, LLC/SCDOT Borrow Pit Mine	305010607	Misc. Non-metallic minerals
Dominion Energy Parr Hydro Station	305010607	Electric Services
Eagle Construction Company/Eagle Family 121 Pit	305010805	Misc. Non-metallic minerals
Eagle Construction Company/Senn Pit	305010912	Misc. Non-metallic minerals
Green Acres Farm & Construction/Green Acres Farm Mine	305010604	Misc. Non-metallic minerals
Greenwood County/Buzzard Roost Hydro Station	305010912	Electric Services
ISE Newberry Inc.	305010909	Chicken Eggs
Jim Ewart DOT Mine	305010607	Misc. Non-metallic minerals
Lindlers Construction of SC/Lindler Mine	305010604	Kaolin and Ball Clay; Misc. Non-metallic minerals
Metts Construction/Metts Clay Mine	305010913	Misc. Non-metallic minerals
Newberry Electric Cooperative, Inc.	305010604	Electric Services
Odell Stuck/Ringer Mine	305010604	Misc. Non-metallic minerals
Samsung Electronics Home Appliances	305010604	Household Laundry Equipment
Sloan Construction/Willingham Mine	305010805	Misc. Non-metallic minerals
Zachry Construction Corporation/SCDOT SC34 Bridge Borrow Pit Mine	305010909	Misc. Non-metallic minerals

Source: SCDHEC, S.C. Watershed Atlas, July 2022

#### 5.4.4.2. Water Quality Monitoring

Local and regional water quality management efforts recognize that the quality of the water supply is directly linked to development activities, demand, and land use practices within the watershed. When considering water quality in the comprehensive planning process, it is important to incorporate measures that protect valuable water resources from excessive runoff and discharge that may create unsafe levels of dangerous chemicals or bacteria. Attention to stormwater retention, percentage of impervious surfaces within developments, and industrial discharge are critical to ensuring water quality in Newberry County.

SCDHEC evaluates water quality through the collection of data from a statewide network of primary and secondary ambient monitoring stations supplemented by rotating watershed monitoring stations. Network data is used to determine long-term water quality trends and attainment of water quality standards, identify locations that warrant attention, and plan and evaluate stream classifications and standards. Data is also used to formulate permit limits for

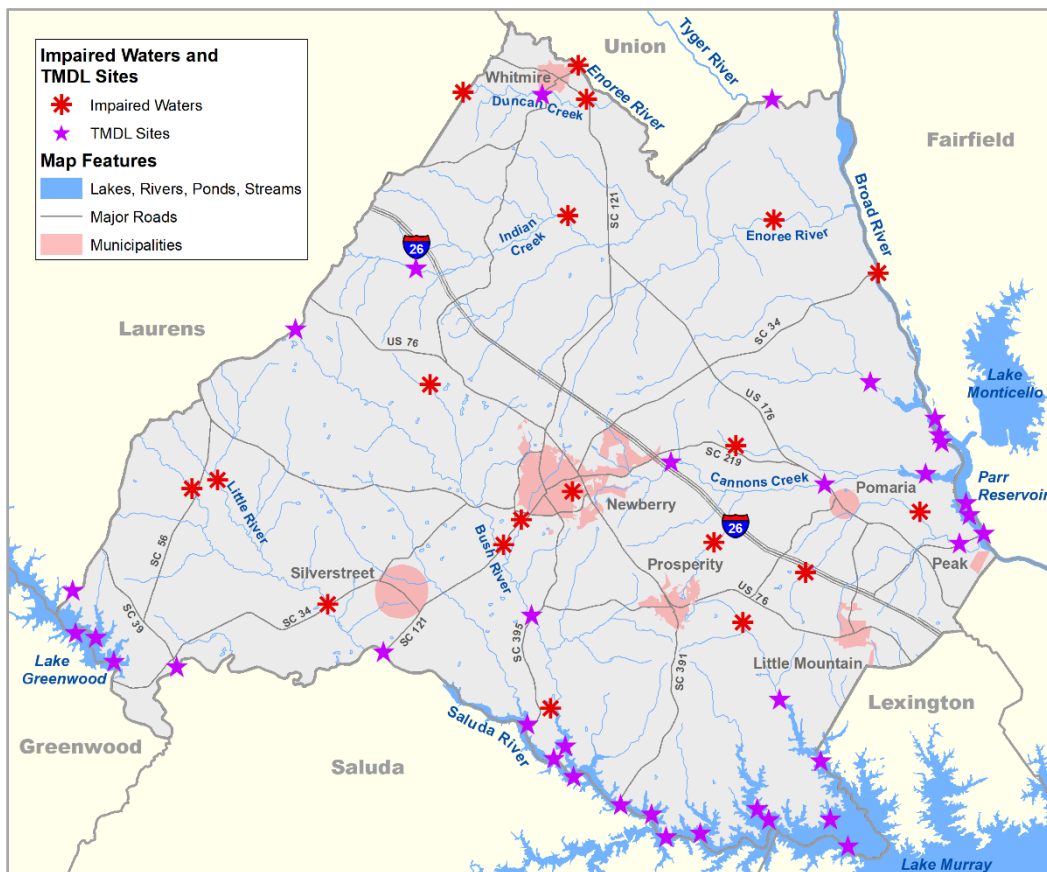


wastewater discharges in accordance with State and Federal water quality standards and the goals of the *Clean Water Act*.

SCDHEC prepares a bi-annual list of impaired waters in compliance with Section 303(d) of the Act. The list is based on a five-year data compilation from multiple water quality monitoring stations in major and secondary waterbodies in Newberry County, along with data gathered from other qualified sources. Impaired waterbodies appearing on the list do not meet water quality standards. Data provided in the *S.C. Watershed Atlas* lists 19 locations in or bordering Newberry County that have impaired waters (Map 5-9).

Once a site is included in the 303(d) list of impaired waters, a Total Maximum Daily Load (TMDL) must be developed by SCDHEC and approved by the EPA. TMDL implementation has the potential to reduce pollution sources within a watershed and restore full use of the waterbody. TMDL refers both to the amount of a single pollutant entering a waterbody on a daily basis and to an associated document and implementation plan with specific measures to improve water quality and attain water quality standards. Thirty-six sites in or bordering Newberry County are covered under an approved TMDL and are also shown on Map 5-9. Assessments of water quality monitoring data for watersheds are regularly updated and published on the S.C. Watershed Atlas website.

**Map 5-9. Impaired Waters and TMDL Sites in Newberry County**



Source: SCDHEC, *SC Watershed Atlas*, July 2022



#### 5.4.4.2. Nonpoint Source Pollution

Nonpoint source (NPS) pollution is untraceable to a single origin or source. Such pollution includes fertilizers, herbicides and pesticides, animal waste, sediment, pathogens, household wastewater from failing septic systems, and contaminants such as street litter carried into water sources by urban runoff. Runoff occurring after a rain event transports pollutants to the nearest waterbody or storm drain where they can impact water quality in creeks, rivers, lakes, estuaries, and wetlands. NPS pollution can also impact groundwater when it seeps into aquifers. Adverse effects of NPS pollution include physical destruction of aquatic habitat, fish kills and closure of fishing areas, limitations on recreational use, reduced water supply, taste and odor problems in drinking water, and increased potential for flooding when waterbodies become choked with sediment.

To comply with the Federal *Clean Water Act*, the State of South Carolina manages several programs to reduce the impact of non-point source pollution. The State's Non-point Source Management Program provides a framework for addressing the major causes and sources of nonpoint source pollution. SCDHEC is the responsible agency for nonpoint source monitoring as part of its biannual assessment of the condition of the State's waters. Nonpoint sources monitored by SCDHEC include mining operations, livestock operations, agriculture, landfills, and land applications of effluent from wastewater treatment facilities. A SCDHEC identified nonpoint source "success story" was completed in 2014 in Newberry County on the Enoree River near Whitmire. The project, funded by an EPA Section 319 grant, involved installation of best management practices and stakeholder education.

Newberry County first adopted an *Erosion and Sediment Control Ordinance* in 1982. The County significantly revised the original ordinance in 2005 to incorporate SCDHEC stormwater management and sediment control regulations for land disturbance activities. This revision was in preparation for SCDHEC delegation of review authority to the County in July 2005. As a delegated review authority, the County issues permits for stormwater and land disturbance activities within its jurisdiction.

The *Newberry County Erosion and Sediment Control Ordinance* reflects the requirements of the *S.C. Sediment and Erosion Control Act*. The purpose of the County's *Erosion and Sediment Control Ordinance* is to prevent the erosion of soils and the sedimentation of streams, control stormwater runoff from developing areas, reduce the damage potential of flood water, protect properties near land disturbing activities, prevent the clogging of ditches and the silting of lakes, provide unobstructed and sanitary channels for stormwater runoff, prevent flooding caused by the encroachment of structures on natural waterways and drainage channels, prevent ground and surface water pollution, promote groundwater recharge, and preserve the natural and scenic beauty of the County.

Under the County's *Erosion and Sediment Control Ordinance*, the land surface of the County may not be disturbed or altered, major drainage channels may not be impeded or encroached upon, and flood areas may not be altered or encroached upon except in accordance with a *Stormwater Management and Sediment Control Plan*, which must be approved by the County's designated





Stormwater Management Official before a permit is issued. Exemptions have been established per the requirements of Section 72-302 of the *S.C. Sediment and Erosion Control Act*. The Ordinance provides specific requirements for permanent stormwater management based on the size of the drainage system, ranging from minor drainage systems of less than 40 acres to County or FEMA floodplains of 300 acres or more. Provisions for flood hazard reduction in FEMA or County designated floodplains, major drainage channels, and other flood prone areas are also included in the Ordinance. Maintenance of all temporary and permanent erosion, sedimentation and stormwater facilities is the responsibility of the property owner, unless such facility has been dedicated to Newberry County by deed.

The Central Midlands *Water Quality Management Plan* notes the most significant water quality issue in Newberry County is protecting the water quality of Lake Murray through the control of NPS pollution. Of secondary concern is protecting the water quality in the Parr Reservoir. Controlling NPS pollution involves the use of best management practices (BMPs). Examples of BMPs include the use of vegetated buffer strips along streams, rivers, and lakes and the restriction of impervious surface area to less than 10% of the total land area. Stormwater retention, preserving green space, and retaining natural stream channels are also effective aids in the control of NPS pollution.

The quality of the water supply is directly linked to development activities, demand, and land use practices within the watershed. When considering water quality in the comprehensive planning process, it is important to incorporate measures that protect valuable water resources from excessive runoff and discharge that may create unsafe levels of dangerous chemicals or bacteria. Attention to stormwater retention, percentage of impervious surfaces within developments, and industrial discharge are critical to ensuring water quality in Newberry County.

#### **5.4.5. Lake and River Planning and Protection**

Several public and private entities are involved in shoreline and river planning and management in Newberry County. Shoreline and river protection is increasingly important as development and environmental pressures threaten area water resources, which may encourage additional organizations to become engaged in the development of management and/or preservation plans for these vital resources.

##### ***5.4.5.1. Lake Murray Shoreline Management***

Construction of the Saluda Hydroelectric Project began in 1927 and was completed in 1930. The resulting hydroelectric reservoir, Lake Murray, is largely located within Lexington County, with significant portions within Newberry, Saluda, and Richland Counties. A 50-year operating license was originally issued by the Federal Energy Regulatory Commission (FERC) to the Lexington Water Power Company. This license was subsequently transferred to SCE&G in 1943 and to Dominion Energy through their purchase of SCANA (SCE&G) in 2019. The Project generates clean renewable energy for Dominion customers and maintains Lake Murray as a popular fishing and recreation destination for residents and visitors to the area.

In 1981, the first *Land Use Management Plan* for Lake Murray was approved, with the requirement that it be updated every five years in consultation with relevant federal, state, and local agencies.



The *Shoreline Management Plan* (SMP) is a comprehensive plan to manage the multiple resources and uses of shorelines in a manner consistent with licensing requirements and project purposes, and to address the needs of the public. The purpose of the Plan is to protect public access to project lands and water and to preserve environmental values – providing a balance between shoreline development, recreational use, and environmental protection. The management guidelines provided in the SMP are applicable to all lands owned by Dominion within the Saluda Project boundary.

Dominion maintains a Shoreline Permitting Program as a means to monitor and regulate development and other activities along the Lake Murray shoreline. Permitted activities and structures requiring Dominion approval include construction or modifications to docks, boat ramps, marine railways, or boat lifts; erosion control and shoreline stabilization (including rip-rap, bio-engineering, and retaining walls); excavation of soil/earth; limited brushing; and commercial and residential water withdrawals for irrigation that require shoreline structures for water access. As a part of its permitting process, Dominion requires that Best Management Practices be employed when a permit is issued to construct or perform any activity or development. If activities such as removal of vegetation and woody debris are not done carefully, then shoreline and lake resources can be threatened by soil erosion, water pollution and habitat degradation.

Since the Lake's development in 1930, it has become a valued recreational destination for residents and tourists. During the early 1970s, development pressure on the Lake began to increase significantly. A large portion of the shoreline is already developed, particularly in more densely populated Lexington and Richland Counties. However, attractive land prices and availability along the Newberry County side of the Lake have resulted in increased development pressures in recent years.

#### ***5.4.5.2. Lake Greenwood Shoreline Management and Master Plan***

Lake Greenwood was created with the construction of the Buzzards Roost Dam in 1940. The Lake is the first reservoir on the Saluda River after its confluence with the Reedy River. The Lake contains 68 billion gallons of water, covers 11,400 acres, and has 212 miles of shoreline that border Greenwood, Laurens, and Newberry Counties. Various power companies have operated the associated hydroelectric generating facility including the present owner, Duke Power. Lake management has remained the sole responsibility of Greenwood County to include oversight of construction, repair, and maintenance of private non-commercial encroachments.

As owner of Lake Greenwood, Greenwood County manages the Lake and its environs and regulates encroachments in large part based on the requirements of FERC. A key component of FERC licensure was the development of a *Shoreline Management Plan* in 2005 to enact measures to protect the shoreline of Lake Greenwood. Lake Greenwood's FERC order mandates proper enforcement, education, and regulation of mitigation measures for all critical habitat classifications around the Lake. The Greenwood County Lake Management Department issues dock and marina permits and works closely with the SCDNR to identify and protect critical habitat. Lake Management also oversees administration and enforcement of the shoreline management program and administers other operations such as lake level management in conformance with FERC requirements.



While the Lake was initially created to supply electricity, it has become an important water and recreation resource for residents and visitors, as well as an economic driver. Boating, swimming, and camping at Lake Greenwood State Park are popular pastimes. The Lake's reputation as one of the State's best fishing lakes is a major draw for both amateur and professional fishermen. While a substantial portion of the land directly adjacent to Lake Greenwood in Newberry County is in single-family residential use, agricultural land continues to be the major land use in the vicinity west of S.C. Highway 39.

In an effort to provide a cooperative vision for the future of Lake Greenwood, the *Lake Greenwood Master Plan* was adopted by Greenwood and Laurens counties in November 2015. The Plan established goals, objectives, and strategies for the use, development, and protection of the Lake Area through the year 2035. The Master Plan is intended to assist elected and appointed officials, land developers, staff, and other agencies in decision-making on a wide variety of issues related to the Lake. Fourteen projects identified in the Plan were completed within the first three years of adoption. Greenwood County and its partners are embarking on a Plan update, with completion anticipated in 2023.

#### **5.4.5.3. Broad River Basin Planning**

SCDNR, SCDHEC, CDM Smith, and the S.C. Water Resources Center at Clemson University are working with the Broad River Basin Council (BRBC) to develop the *Broad River Basin Plan*. The Plan is one of eight major river basin plans to be incorporated into a new State Water Plan that will guide the policy, management, and conservation of the State's water resources for the next 50 years. The Broad River Basin Plan and plans for the Edisto and Pee Dee River Basins are underway, with plans to follow for the five remaining river basins, including the Saluda River Basin in the southwestern area of Newberry County (Map 5-4). Completion of the Broad River Basin Plan is anticipated in early 2024.

The Broad River Basin Council is appointed by SCDNR and includes a diverse group of public and private stakeholders with water-related interests in the basin. Stakeholders include developers, local governments, energy providers, economic developers, industries, non-profit environmental protection and land conservation groups, and water providers. The Council is tasked with developing a stakeholder-driven, basin-wide plan that meets all water needs for the next five decades. Public engagement will be incorporated in plan development.

The Broad River Basin Plan will include a physical and economic description of the basin; a summary of current, permitted, and projected water use in the basin; documentation of basin-wide drought response initiatives; a list of legislative, policy, regulatory, and planning process recommendations developed by the BRBC; and an implementation plan designed to achieve short-term planning and management objectives. A major focus of the Broad River Basin Plan is planning for droughts to ensure that water demands can be met over the planning horizon. While the Plan will not be regulatory, it will provide policy recommendations

#### **5.4.6. Wetlands**

Wetlands are among the most productive ecosystems in the world, comparable to rain forests and coral reefs, with profound ecological, aesthetic, and economic value. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands provide a natural filtration system for



sediment and pollution, while serving as critical habitat for numerous species. The public safety and economic benefits of wetlands include flood protection, erosion control, groundwater recharge, pollution abatement, sediment filtering, and the provision of a variety of harvestable natural products. There are also recreational values in wetlands for boating, fishing, hunting, and nature watching.

All Newberry County wetlands are classified as freshwater. Freshwater wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Freshwater wetlands store excess stormwater, mitigating the impact of flooding, purifying water by holding and breaking down pollutants, and trapping silt and soil to reduce clogging of nearby streams. Some wetlands store water in the rainy season and release the water later into nearby aquifers or underground streams, recharging the groundwater that supplies many South Carolinians with drinking water.

Wetlands are susceptible to naturally occurring changes and the negative human impacts of urban development. Development activities such as pond construction, filling, draining of lands for farming, and pollution have resulted in wetland loss or degradation. The loss of wetlands, especially through filling, increases runoff and impairs beneficial functions of flood control, groundwater recharge, and water quality improvement. Total wetlands acreage in South Carolina declined by one-quarter from the late 1700s through the early 2000s, primarily as a result of human activities (*USGS National Water Summary on Wetlands Resources, 2016*).

Freshwater, forested wetlands currently comprise approximately 80% of the State's wetlands. National Wetlands Inventory (NWI) data indicates the presence of freshwater wetlands in the vicinity of rivers and creeks in Newberry County (Map 5-10). Factors considered in wetlands designation include the presence of hydric soils, hydrophytic vegetation, and hydrological conditions that involve a temporary or permanent source of water that can cause soil saturation. NWI data is generated on a large scale, necessitating that the exact location of any wetlands be determined on a parcel-by-parcel basis.





Map 5-10. Wetlands



Source: U.S. Fish and Wildlife Service, National Wetlands Inventory, July 2022

#### 5.4.7. Flood Plains

Flood plains are areas that consist of a stream or river (floodway) and the adjacent areas that have been or can be covered by water (floodway fringe). Flood plains perform a critical function by temporarily storing and carrying floodwaters, reducing potential flood peaks, recharging groundwater supplies, and providing plant and animal habitats. Development within a flood plain expands the flood plain boundary and increases the volume of runoff, making more areas and properties susceptible to flooding. Local development review processes should ensure that new construction and activity will not increase flooding on adjacent and nearby properties.

In 1968, Congress passed the *National Flood Insurance Act* and created the National Flood Insurance Program (NFIP). The Act called for identification and publication of all flood plain areas that have special flood hazards and the establishment of flood-risk zones in all such areas. Flood Hazard Boundary Maps were developed that delineated the boundaries of each community's special flood hazard areas using available data or approximate methods.

The maps identified areas within a community that are subject to inundation by a 100-year flood (Zone A). The 100-year flood has a one percent chance of being equaled or exceeded in any given year. The maps were intended to assist communities in managing floodplain development, as well as assisting insurance agencies and property owners in identifying those areas where the purchase



of flood insurance was advisable. Today these maps are prepared and updated by the Federal Emergency Management Administration (FEMA) as the Flood Insurance Rate Maps (FIRM).

The goal of the NFIP is to reduce the impact of flooding on private and public structures by providing affordable insurance for property owners. The program encourages communities to adopt and enforce flood plain management regulations to mitigate the effects of flooding on new and improved structures. The primary requirement for community participation in the NFIP is the adoption and enforcement of flood plain management regulations that meet the minimum standards outlined in the NFIP regulations.

The intent of flood plain management is to minimize the potential for flood damages to new construction and to avoid aggravating existing flood hazard conditions that could increase potential flood damage to existing structures. To protect structures in flood-prone areas, NFIP regulations require that the lowest floor of all new construction, and substantial improvements of residential structures, be elevated to or above the Base Flood Elevation (BFE).

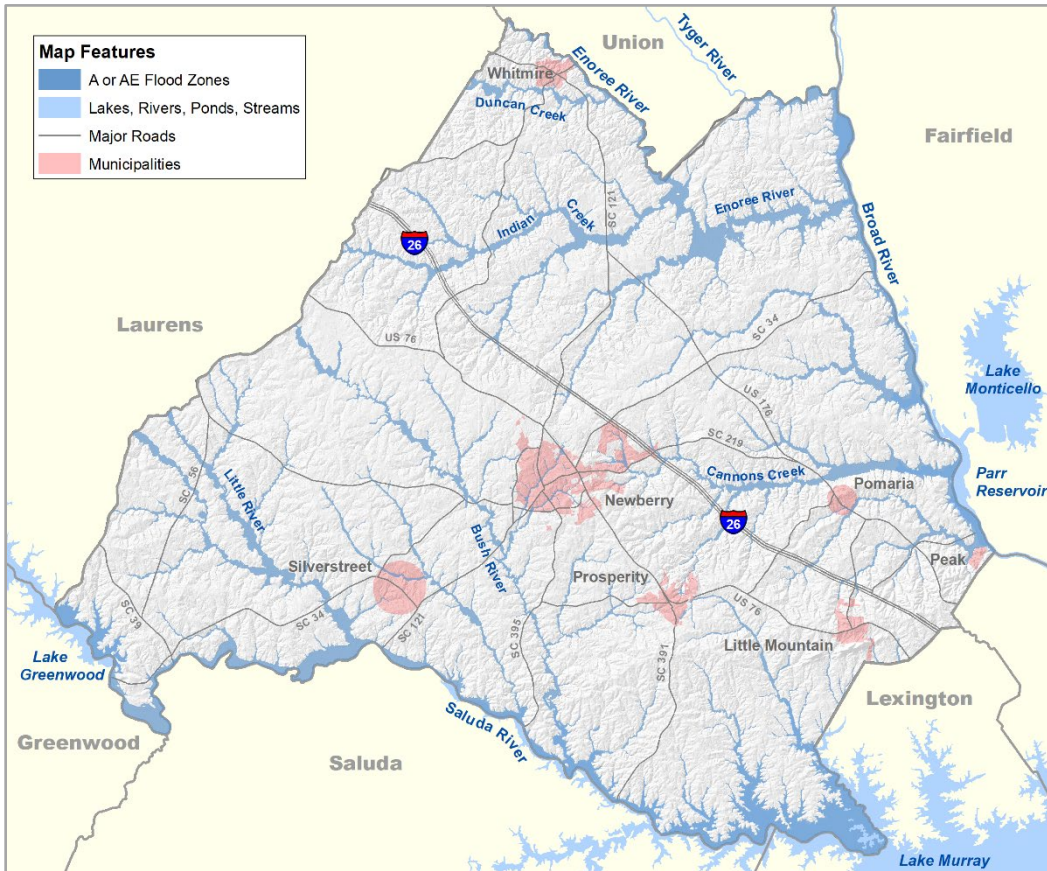
Flood hazard areas identified on FIRMs are denoted as *Special Flood Hazard Areas* (SFHA). The SFHA is an area that will be inundated by flood events having a 1% chance of being equaled or exceeded in any given year – also known as the base flood or 100-year flood. Considered as high risk areas for flooding, SFHAs are denoted on Newberry County FIRMs as Zone A and Zone AE. As illustrated in Map 5-11, these areas are found along the shores of Lakes Murray and Greenwood; along the Broad, Bush, Enoree, Little, and Saluda Rivers; and along other creeks and tributaries. While Map 5-11 provides a generalized depiction of flood zones to review for planning purposes, site-specific questions related to flood zones should be directed to the County Flood Plain Manager.

Newberry County is a participant in the Federal Flood Insurance Program and adopted a *Flood Damage Prevention* ordinance in 2003, with an amendment in 2011. The Ordinance applies to all areas of special flood hazard as identified by the FEMA maps for Newberry County. The County is bordered on all but its western border and a small portion of the southeastern border by rivers and lakes. While these water bodies and their tributaries are the primary drainage outlets for water flowing into and through the County, they can overflow when inundated by heavy rains, causing flash flooding in low lying areas. Based on data provided in the *2021 Central Midlands Hazard Mitigation Plan*, flood damage in Newberry County is generally the result of localized heavy precipitation leading to flooding along smaller creeks and tributaries to the Broad and Saluda Rivers, as well as flash flooding due to ponding and/or inadequate drainage. As revealed in the record-setting October 2015 flood event, a high risk is also possible from the failure of small pond dams, particularly when simultaneous and cascading dam failures occur in the same watershed.

The *2021 Central Midlands Hazard Mitigation Plan* notes that flooding in Newberry County is not restricted to the 100-year and 500-year flood plains. The northern half and southeastern quarter of Newberry County have a high potential for flash flooding, particularly in low-lying areas and areas downstream from small dams. Specific flooding events and impacts are profiled in the *Resiliency Element*.



Map 5-11. Flood Zones



Source: FEMA, National Flood Hazard Layer, July 2022

### 5.5. Goals, Objectives and Implementation Strategies

The following table summarizes actions to be undertaken in the coming decade to achieve the goals and objectives identified in the Natural Resources element. Element goals are broad-based ideals intended to guide the future of the community, while objectives elaborate the goals to outline the framework and provide the basis for the more detailed and measurable plan strategies. Each supporting implementation strategy includes a listing of the agencies that are accountable for the implementation, as well as a time frame for completion.

GOALS/OBJECTIVES/STRATEGIES	ACCOUNTABLE AGENCY	TIMEFRAME
<b>GOAL 5.1. Protect and improve air quality in Newberry County</b>		
<b>OBJECTIVE 5.1.1. Continue support of plans and policies related to air quality at the county and regional levels</b>		
<i>STRATEGY 5.1.1.1.</i> Coordinate and partner with jurisdictions in the Central Midlands region in collaborative efforts to improve air quality.	Newberry County, Municipalities, CMCOG	On-going



GOALS/OBJECTIVES/STRATEGIES	ACCOUNTABLE AGENCY	TIMEFRAME
<b>GOAL 5.2 Protect and preserve the County's land resources</b>		
<b>OBJECTIVE 5.2.1. Protect and preserve prime agricultural and forest lands</b>		
<i>STRATEGY 5.2.1.1.</i> Explore partnerships to encourage and promote the preservation of prime agricultural and forest lands through methods such as location of compatible uses adjacent to such lands and buffering of incompatible uses.	Newberry County, Municipalities, Clemson Extension Service, Property Owners, USDA – NRCS, USDA - Farm Service Agency	Ongoing
<i>STRATEGY 5.2.1.2.</i> Review regulations and policies and amend as needed to remove any obstacles to the protection and preservation of prime agricultural and forest lands.	Newberry County Municipalities	2033
<b>OBJECTIVE 5.2.2. Protect the habitats of rare and endangered species within the County</b>		
<i>STRATEGY 5.2.2.1.</i> Develop partnerships among local governments, SCDNR, property owners, and conservation organizations to inventory and map locations where rare and endangered species are found within the County.	Newberry County, Municipalities SCDNR, Conservation Organizations, Property Owners	Ongoing
<i>STRATEGY 5.2.2.2.</i> Review regulations and policies to remove obstacles and support opportunities to protect rare and endangered species habitat such as development of greenways and protection of floodplains.	Newberry County, Municipalities	2033
<i>STRATEGY 5.2.2.3.</i> Support efforts by public and private organizations to protect critical habitats in Newberry County through easements and other measures as appropriate.	Newberry County, Property Owners, Conservation Organizations, SCDNR	Ongoing
<b>OBJECTIVE 5.2.3. Maintain and expand trails and parks and recreation facilities for County residents and visitors</b>		
<i>STRATEGY 5.2.3.1.</i> Support the development of bicycle and pedestrian plans for the towns of Little Mountain, Prosperity, and Pomaria.	Newberry County Municipalities CMCOG Pedestrian and Bicycle Sub-committee	2024
<i>STRATEGY 5.2.3.2.</i> Encourage and promote the development of bicycle and pedestrian plans for additional areas in Newberry County.	Newberry County, Municipalities, CMCOG Pedestrian and Bicycle Sub-committee	2028
<b>OBJECTIVE 5.2.4. Protect and expand natural areas and open space throughout the County</b>		
<i>STRATEGY 5.2.4.1.</i> Review regulations and policies to identify additional opportunities as well as barriers for protecting existing natural areas and open space.	Newberry County, Municipalities, SCDNR	2033
<i>STRATEGY 5.2.4.2.</i> Support efforts by public and private organizations to conserve open space, natural areas, and scenic vistas in Newberry County through easements and other measures as appropriate.	Newberry County, Public and Private Conservation Organizations, SCDNR	Ongoing





GOALS/OBJECTIVES/STRATEGIES	ACCOUNTABLE AGENCY	TIMEFRAME
<b>GOAL 5.3. Preserve and protect Newberry County's water resources</b>		
<b>OBJECTIVE 5.3.1. Continue expansion of sewer service to additional areas to reduce dependence on septic systems and contamination of surface water sources</b>		
<i>STRATEGY 5.3.1.1.</i> Support sewer providers in the extension of sewer service to currently unserved or underserved areas to minimize the need for septic tanks where conditions are not suitable or water sources may be compromised.	Newberry County, Municipalities, NCWSA, Municipal Providers	Ongoing
<i>STRATEGY 5.3.1.2.</i> Support sewer providers in the expansion of existing wastewater treatment facilities to accommodate the expansion of water and sewer service.	Newberry County, Municipalities, NCWSA, Municipal Providers	Ongoing
<b>OBJECTIVE 5.3.2. Maintain and improve water quality and quantity to meet the needs of County residents, employers, and institutions</b>		
<i>STRATEGY 5.3.2.1.</i> Coordinate with NCWSA and municipal water and sewer providers to maintain a countywide approach to water conservation and protection.	Newberry County, Municipalities, NCWSA, Utility Providers	Ongoing
<i>STRATEGY 5.3.2.2.</i> Explore additional local and regional strategies to minimize non-point source pollution and institute Best Management Practices (BMP) for the protection of water resources.	Newberry County, Municipalities, NCWSA, CMCOG, SCDHEC	2033
<i>STRATEGY 5.3.2.3.</i> Coordinate with SCDHEC to mitigate identified water quality impairments.	Newberry County, Municipalities, NCWSA, Utility Providers, SCDHEC	Ongoing
<b>OBJECTIVE 5.3.3. Mitigate the impact of new development and redevelopment on water quality</b>		
<i>STRATEGY 5.3.3.1.</i> Review amendments to zoning and subdivision regulations for possible obstacles to water quality maintenance and for opportunities to ensure the protection of water sources and quality.	Newberry County, Municipalities	Ongoing
<i>STRATEGY 5.3.3.2.</i> Review the need to increase impervious surface limitations in developments and substantial redevelopments to minimize stormwater runoff.	Newberry County	2033
<i>STRATEGY 5.3.3.3.</i> Explore stormwater retention and management requirements for new developments and substantial redevelopments, both public and private.	Newberry County	2033
<i>STRATEGY 5.3.3.4.</i> Continue to regulate land disturbance activities to control erosion and sedimentation.	Newberry County	Ongoing
<i>STRATEGY 5.3.3.5.</i> Support regulatory authorities in their efforts to preserve water quality and habitat through shoreline management policies and regulation.	Newberry County, Dominion Energy, Greenwood County	Ongoing
<b>OBJECTIVE 5.3.4. Minimize flooding through the protection of flood hazard areas</b>		
<i>STRATEGY 5.3.4.1.</i> Periodically review flood regulations and procedures to ensure protection per FEMA requirements and to evaluate conditions that may require more stringent standards.	Newberry County, Municipalities	Biannually