NATURAL RESOURCES ELEMENT

Inventory of Existing Conditions

Natural Areas

Natural areas include extensive forested areas as well as numerous wetland areas that are an essential part of the County's overall ecosystem and appeal. The wooded areas contribute to the attractiveness of the County and are large enough to accommodate complete natural systems. As the County develops, more attention will be given to preserving the more significant areas for future generations.

Soils

Soil conditions have a significant impact on land development. Consideration of general soil characteristics is essential to the planning process and subsequent development patterns. The majority of Clarendon County has broad, nearly level to gently sloping, and predominantly sandy and loamy soils with soils on the floodplains of the rivers and streams subject to flooding.

Soil types and general uses are determined by soil profiles. A profile is the sequence of natural layers, or horizon, in a soil; it extends from the surface down into the parent material that has not been changed significantly by leaching or by the action of plant roots. Soils that have similar profiles make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics.

The major soil series in Clarendon County are Clarendon, Dothan, Fuquay, Lynchburg, Paxville, Rains, Rutledge, and Troup, which have been grouped into nine general soil associations. Soil associations are made up of adjacent soils that occur as areas large enough to be shown individually on soil maps, but are not shown as one unit because the time and effort of delineating them separately cannot be justified.

The U.S. Department of Agriculture has analyzed these associations for characteristics which limit their uses for selected urban-type purpose such as building foundations, septic tank absorption fields, sewage lagoons, site for light industries, roads and streets, and recreation sites. Limitations are rated in accordance with the following categories:

Slight - soils that have few, or no limitations, or limitations that can be easily overcome

Moderate - limitations should be recognized, but can be overcome by practical means

Severe - suitability of the soils for the specified use is questionable because limitations are difficult to overcome or are so restrictive that overcoming them may not be practical

1. Dothan-Lynchburg-Rains associations: This association consists of broad ridges occupied by nearly level to gently sloping, well drained soils, and depressions at the lower elevations occupied by poorly drained soils. This association is only moderately well suited to industrial sites, recreational uses, or sites for dwelling that have onsite sewage disposal because the poorly drained soils are poorly suited to these uses.

2. Faceville-Marlboro-Rains associations: This association consists of broad areas of nearly level to gently sloping, well drained soils and smaller areas of low lying flat and depressed, poorly drained soils. This association is located in the western section of the County between Summerton and Rimini and makes up about 5 percent of the County. Most of the soils in the association are suited to industrial sites, recreational uses, or sites for dwellings that have onsite sewage disposal. The poorly drained soils are less suited.

3. Lakeland-Rutledge associations: This association consists of areas of nearly level to gently sloping, excessively drained soils and small depressed area of very poorly drained soils. It adjoins and is parallel to Lake Marion and extends north and south of Dingle Pond. Persanti Island is in this association. This association is moderately suited to industrial sites, recreational uses, or sites that have onsite sewage disposal.

4. Lynchburg-Clarendon-Rains associations: This association consists of broad areas of nearly level to depressed soils. Major drainage is poorly defined in some areas and elevations vary. This association makes up about 23 percent of the County. Most of this association is poorly suited to industrial sites, recreational uses, or sites for dwellings that have onsite sewage disposal.

5. Lynchburg-Paxville association: This association consists of broad areas of level and depressed soils east of Foreston. Elevations vary only a few feet throughout the association, and major drainage is poorly developed. This association is poorly suited to industrial sites, recreation uses, or sites for dwellings that have onsite sewage disposal because the water table is seasonally high.

6. Persanti-Cantey-Red Bay associations: This association consists of broad areas of nearly level to depressed soils and a few small areas of gently sloping soils. It contains moderately well drained and poorly drained soils that have a loamy surface layer and a clayey subsoil, as well as well drained soils that are loamy throughout. The association if found on a terrace adjacent to the Santee River in the southern to southwestern part of the County. It adjoins and is parallel to Lake Marion from Potato Creek to Rimini. This association makes up about 7 percent of the County. Most of the association is poorly suited to industrial sites, recreation uses, or sites for dwellings that have onsite sewage disposal.

7. Ponzer-Rutledge association: This association consists of several oval-shaped Carolina Bays just north of Turbeville, in the northern part of the County. It contains very poorly drained soils that have mucky surface layer and a loamy underlying layer, or that are sandy throughout. This association is wet and is poorly suited to industrial sites, recreation uses, or sites for dwellings that have onsite sewage disposal.

8. Johnston-Portsmouth associations: This association consists of the flood plains of Black River and Pocotaligo River. It consists of very poorly drained soils that are dominantly loamy throughout. This association makes up about 6 percent of the County. This association is wet and is poorly suited to industrial sites, recreation uses, or sites for dwellings that have onsite sewage disposal.

9. Tawcaw association: This association is on the flood plains of the Santee River in the southeast corner of the County, just east of Santee Dam. This consists of somewhat poorly drained soils that have a loamy surface layer and a clayey subsoil. This association makes up about 3 percent of the County. This association is frequently used for sites for dwellings that have onsite sewage disposal.

The soil information presented here is to be utilized as a guide when considering land development. Each association has several different soil types with varying properties. It is necessary that detailed soil boring and tests be made to determine specific limitations and the degrees of such limitations before building on or abandoning a potential site. Additional information and assistance is also available from the local USDA Soil Conservation Office and the South Carolina Department of Health and Environmental Control.

Although most of the development outside the four municipalities is on septic tanks, most of the soils in the County are ill suited to septic tank use. The Lake Marion area is particularly vulnerable to pollution resulting from septic tank leachate. The County will begin a program to provide central sewer service to this area as soon as financially feasible.

Ground and Surface Water Hydrology, Quality and Water Uses

Ground water in the Clarendon County occurs under both water table and artesian conditions. The water table over most of the area is quite close to the surface. Recharge is by direct accretion from precipitation as well as from the wetlands that are found throughout the County.

Discharge is by springs, swamps, streams, underlying Artesian aquifers and evapotranspiration. Recharge for an artesian aquifer (in this case, the Tuscaloosa formation) is determined to a large degree by the difference in the "head" between the water table and the surface. Recharge usually occurs along the outcrop areas of the formation, though in the case of the Tuscaloosa formation, leakage from the overlying formations and water table accounts for most of its recharge.

In South Carolina, water table aquifer fluctuations are related to precipitation during the winter and the cooler months of the spring and autumn. During the summer, there is a decline in water levels even though the rainfall is normally heavier during this period. Summer rains tend to be intense rather than long lasting. The high rate of evapotranspiration, which prevents most, if not all, recharges to the water table aquifer.

Vegetation

The vegetation in Clarendon County consists largely of active farmlands, wetlands and open woodlands. The major woodland types are Slash and Lobolly Pine, Oaks, Dogwood, and Poplar trees. A majority of lands in the County are farmland and pasture land, with natural plantings indigenous to the area.

Plant and Animal Habitat

Established in 1941, the Santee National Wildlife Refuge has 15,095 acres. Wetlands and open water comprise most of the acreage (10,622 acres) within the four refuge units (Bluff, Dingle Pond, Pine Island and Cuddo). The remaining acreage (4,473) is a mixture of hardwood, pine plantations, cropland and old fields. It also has a hydroelectric reservoir on Lake Marion.

Approximately 100,000 ducks and 12,000 Canada geese winter at the refuge, and with recorded observations of 296 species of birds live there or visit. Mammals include bobcat, deer, raccoon, squirrel, mink, otter and fox. More than 100 species of fish there include chub, shiner, sucker, sunfish, bass, perch, sturgeon, gar, shad, pike, catfish, swampfish, crappie, needlefish, mullet, and sole.

January is the peak month for Canada geese and mallards. In February, there is an increase of wood ducks, purple martins, and bluebirds. Alligators have been seen sunning on some of the canal edges in March. April and May are excellent months for fishing. In August the summer warblers begin to migrate south, but September is the peak month for migratory songbirds. Ruby-crowned knights, white-throated sparrows, finches, cormorants, hawks and bald eagles are seen in October and November.

December is a good month to spot whistling swans and to fish for largemouth bass, catfish, and striped bass. Sport fishing is permitted year round, but specific waters are closed from November 1 through February 28.

Flood Insurance Program

From 1986 through 1990, the Federal Emergency Management Agency conducted a Flood Insurance Study on the unincorporated areas of Clarendon County, which resulted in the adoption of the Flood Damage Prevention Ordinance for Clarendon County in 1991 and the current detailed Flood Insurance Rate Maps. This process is under way again spearheaded by the South Carolina Department of Natural Resources. Under the Flood Mitigation, Map Modernization program, the SC DNR estimates these modernized maps will be completed in September, 2010, for Clarendon County. The purpose of the Flood Insurance Study was to investigate the existence and severity of flood hazards in the unincorporated areas of Clarendon County, and to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study developed flood risk data for various areas of the community that was used to establish flood insurance rates and assist the community in its efforts to promote sound flood plain management. The incorporated areas within the County were excluded from the study.

Flooding caused by overflow of the Pocotaligo River, Ox Swamp, Loss Branch, Davis Branch, Bell Branch, Potato Creek, Potato Creek Tributary No. 1, White Oak Creek, White Oak Creek Tributary No. 1, White Oak Creek Tributary No. 2, Taw Caw Creek, Little Taw Car Creek, Ragins Branch, and Jacks Creek were studied in detail. Areas having low development potential, or minimal flood hazard, were previously studied and shown on the Flood Hazard Boundary Map for Clarendon County and were incorporated into the Flood Insurance Study.

On March 18, 1991, Clarendon County Council passed the Flood Damage Prevention Ordinance that brought the County into compliance with pertinent federal and state guidelines. All subdivision plats and requests for building permits are subject to review prior to any approval or acceptance. The Flood Insurance Study covered the unincorporated areas of Clarendon County.

The County contested the flood zone lines as depicted on the original maps and appropriate changes were made on the maps prior to acceptance by the County. This action was very beneficial to homeowners in the Lake Marion area. The areas studied were selected with priority

given to all known flood hazard areas and areas of projected development, or proposed construction, through February 1993. The scope and methods of study were proposed and agreed upon by FEMA and Clarendon County.

Most of the County's floodplains are the major wetland areas. Parts of the North Carolina, South Carolina and Georgia coastal plain have isolated wetland areas known as Carolina Bays. The State of South Carolina has declared these unconnected wetlands to be significant natural resources that should be protected. Figure III-1 at the end of this Element depicts the major wetlands and floodplains in the County.

A Statement of Needs

The major component that is often lost in the growth and development of a County area is the conservation and protection of natural resources, historic areas, and environmentally sensitive areas. The protection of waterways and lands, especially Lake Marion, Santee National Wildlife Refuge, and the Pocotaligo Swamp Park will be a priority of the County.

Goals, Objectives and Policies (Implementations Actions)

Goal - Conserve and protect the County's natural resource areas.

Objective A - The County will investigate provision of central sewer service to environmentally sensitive areas of the County.

Policy A-1 The County will complete an investigation of the financial feasibility of providing public/private sewer service to the most environmentally sensitive areas of the County by June 1, 2002.

Objective B - The County will protect the Santee National Wildlife Refuge and SCPSA conservation areas from encroachment of incompatible uses.

Policy B – 1 The County will include land development regulations in the Unified Development Code that protect the Refuge from encroachment of incompatible uses.

Policy B- 2 The County will use its utility franchise authority to direct commercial and industrial development away from the Refuge.

Objective C - The County will ensure that no development occur within identified wetland areas, including Carolina Bays, unless adequate mitigation is provided.

Policy C –1 Development of Carolina Bays and wetlands, except in extreme conditions, shall be prohibited.

Policy C –2 The Unified Development Code will include provisions to encourage the use of wetlands as open space in development projects.

Objective D - The County will continue to implement the Flood Damage Prevention Ordinance and maintain membership in the Flood Insurance Program.

Policy D – 1 The Unified Development Code will contain the necessary regulations to continue membership in the Flood Insurance Program.

Policy D – 2 No proposed development project shall be approved, unless adequate assurance is provided that the requirements of the Flood Insurance Program are met.

Figure III-1 wetlands areas map goes here