

## **4.0.0.0: Natural and Cultural Resources**

### **Introduction**

The natural and cultural resources element of the comprehensive plan provides local governments the opportunity to inventory their natural, environmentally sensitive, historic, archeological and cultural resources; to assess current and future needs to manage these resources; and to develop goals, policies and strategies for their appropriate use, preservation and protection.

## **4.1.0.0: Inventory**

### **Natural Features**

Long County is located in the upper interior coastal region of Georgia, which encompasses part of the South Atlantic Coastal Plain's "barrier island sequence," descriptive of its 2300 miles of tidal shoreline. Low lands, tidal marshes, remote coastal barrier islands, oak and pine "flatwoods," and land elevations of less than 150 feet above sea level typify the region.

### **Climate**

The climate of the region is typical of the temperate/subtropical location at 32 degrees / north latitude: Summer temperatures of 90 degrees F. for the six months from May through September; measurable rainfall usually occurring 110 days and averaging 45 inches per year; and 30 or fewer days of freezing temperatures per year.

### **Geology and Land Use**

Long County encompasses approximately 257,363 acres (403 square miles) (13 per cent) of the region's 3775 square miles. The surface geology of the region and the county is characterized by widely separated sand ridges and domes well suited for either agriculture or urban uses, interspersed by extensive wetlands.

The majority of the region's surface area is devoted to non-urban land uses: Approximately 91 per cent is in forestry or government reservations and 2 percent is developed for human communities.

Vegetation is typical of southern coastal plains: Approximately 85 percent of the land area is forested, less than 0.5 percent is farmed, and the remaining 19.5 percent is marsh or grassy vegetation. Needleleaf trees predominate over broadleaf forested areas.

Long County's hydrology is evidenced by numerous creeks and swamps, which influence the floodplains and drainage patterns of the subregion. Parts of the Altamaha River and Beards Creek form the Southern and Western boundaries of the county; the South Newport River forms the southern boundary in the eastern part. McIntosh County forms the eastern edge of Long County.

Ludowici -the county seat and only city in Long County -is located on a shallow aquifer recharge area, on the eastern margin of the western one-third of Long County. Most of that city is constructed on a 3-mile wide prehistoric sandy marine terrace, whose 12-mile axis extends southwest to northeast at elevations of 70 to 100 feet + M.S.L.

Although most of the urbanized area is developed, much of it has retained extensive natural vegetation and street tree canopies.

### **Part 5 -Environmental Planning Criteria**

The Georgia Department of Natural Resources (DNR) has published "environmental planning criteria" as required by Part 5 of the 1989 Georgia Planning Act. The criteria supplement the "Minimum Planning and Procedural Standards" issued by the Georgia Department of Community Affairs and closely relate to government comprehensive plans. Although they strongly emphasize evaluation of plans of adjoining jurisdictions, part 5 standards materially are regional criteria because they relate to "watersheds," "aquifer ground recharge areas" and "wetlands."

### **Laws, Administrative Rules and Programs for Local Land Use Management**

Long County's natural resources are visible and essential parts of its character and attractiveness, but are also its most vulnerable features. The favorable soils, vast forests and natural areas in the county visible today could gradually disappear in the name of development "progress," which is why it is important to assure a balance of environmental conservation and preservation, concurrent with proposals for new land uses, annexation and economic development.

An interlocking network of protective regulatory measures exists that assure significant environmental protection measures. River corridor protection, soil erosion and sedimentation regulations, federal wetlands controls, state environmental protection criteria, and local land use zoning and subdivision regulations reinforce the protective network. Numerous devices are available for local land use management. A partial list includes the following devices:

**Georgia Mountains and River Corridors Protection Act:** Addresses protection on selected rivers as part of local comprehensive planning requirements; reinforces river management controls up to 100 horizontal feet of the river bank, including compatible land uses of forestry production, agriculture, residential, and water/wastewater treatment. Where required, the plan addresses the impact of adverse development on the river; associated flora and fauna; public health, safety and welfare; and the preservation of archeological, historical, and sensitive natural resources.

**Department of Natural Resources (DNR) Wetlands Protection Criteria:** includes mapping of wetlands and coordination with Section 404 of the 1977 Clean Water Act (Federal) which requires permits for activities in wetlands involving fill material, especially enforceable in areas with a permitting requirement for construction (and with a permitting authority, such as a Building Inspection Office or Management Authority). Other features include identifying significant wetlands and restrictive land use measures.

**DNR Criteria for Protection of Groundwater Recharge Areas:** These criteria involve the identification of all groundwater recharge areas in local jurisdictions and the regulation of waste disposal sites, hazardous materials facilities, water holding basins, wastewater irrigation systems, and septic tanks.

**Georgia Department of Human Resources Rules and Regulations for On-Site Sewage Management Systems:** Prohibits septic tanks in a floodplain, and specifies the size of residential lots based on the permeability of the soil and percolation rates for that soil type.

**1989 Georgia Comprehensive Planning Act:** In addition to establishing minimum standards per local comprehensive plans, this law permits the identification and nomination of Regionally Important Resources (RIR's), for consideration in local comprehensive plans. Local governments may designate special protective measures for RIR's, and are also required to submit to their Regional Development Centers (RDC's) any proposed land development actions which may affect a designated RIR. This is also a review process for Developments of Regional Impacts (DRI).

**National Park Service:** Offers potential for protection through National Park Service management system designation of other programs.

**Local Land Management Regulations:** For Local governments (cities and counties) local land use zoning ordinances, special management districts in land development codes, and standard city/county codes permit protection of public and private lands.

#### **Other Land Use Management Regulations**

- 401 Water Quality Certification Program
- Dam Safety Act (1978)
- Waterwell Standards Act (1985)
- Environmental Policy Act (1991)
- Georgia Safe Drinking Water Act (1977)
- Groundwater Use Act (1979)
- Georgia Asbestos Safety Act (1986)
- Shore Protection Act (1992)
- River Corridor Protection Act (1991)
- Shellfish Laws (1991)
- Water Quality Control Act (1992)
- Tidewaters Protection Act (1992)
- Scrap Tire Amendment (1992)
- Oil or Hazardous Material Spills or Releases (1988)
- Timber Tax Amendment (1991)
- Georgia Surface Mining Act (1992)
- Right of Passage Amendment (1992)
- Underground Storage Tanks Regulations (1988)

- Superfund Amendment (1992)
- Comprehensive Solid Waste Management Act (1992)
- Federal Emergency Management Act (1987)
- Clean Water Act (1993)

## INVENTORY

### Water Resources

As in other jurisdictions throughout the state, water is a fragile resource. Long County residents recognize the importance of protecting and ensuring clean and safe drinking water. Maintaining high standards for water quality results in public health benefits that are advantageous to all Georgians. Land-disturbing activities associated with development can increase erosion and sedimentation, and storm water runoff and industrial uses that involve hazardous waste pose a potential risk of contamination to nearby public drinking water supplies. Given the significance of water resources, it is important to ensure that best management practices are in place to guide future development.

As part of the requirements of the Georgia Department of Community Affairs' Minimum Planning Standards, communities must comply with minimum land and water resource standards established by the Georgia Department of Natural Resources (DNR). Commonly referred to as "Part 5 Minimum Environmental Standards", these statewide standards were developed by DNR pursuant to Code Section 12-2-8 and address three basic concerns:

- Ø Aquifer Recharge Areas
- Ø Water Supply Watersheds
- Ø Wetlands

To comply with Part 5 Standards for each category of resources, communities must:

- Ø Identify and inventory any occurrences of these resources within their jurisdiction.
- Ø Determine whether appropriate protective regulations that are at least as stringent as those imposed by DNR are in place.
- Ø Determine whether additional regulations are needed to meet or exceed the minimum DNR standards.

## Public Water Supply Sources

Long County does not operate a public water system. Most Long County residents rely on private wells for their water supply. Many of the mobile home parks rely on private water systems maintained by the park owners.

The City of Ludowici operates a public water supply for 1440 city residents. The City draws water from two permitted wells from the Floridan and Miocene aquifers. The current permitted yearly withdrawal rate is 741,000 gallons per day.

**Table N-1  
Community Water Systems**

<u>Water System Name</u>	<u>Principal County Served</u>	<u>Population Served</u>	<u>Primary Water Source Type</u>	<u>System Status</u>	<u>Water System ID</u>
<a href="#">AARON MOBILE HOME PARK</a>	LONG	57	Ground water	Active	GA1830006
<a href="#">BEAVER HILL MOBILE HOME PARK</a>	LONG	78	Ground water	Active	GA1830039
<a href="#">BENTON BAY MOBILE HOME PARK</a>	LONG	8	Ground water	Active	GA1830040
<a href="#">CARTER MOBILE HOME PARK</a>	LONG	44	Ground water	Active	GA1830026
<a href="#">CEDAR BROOK MOBILE HOME PARK</a>	LONG	55	Ground water	Active	GA1830001
<a href="#">CG TFI MOBILE HOME PARK</a>	LONG	65	Ground water	Active	GA1830035
<a href="#">COUNTRY MANOR MOBILE HOME PK</a>	LONG	312	Ground water	Active	GA1830017
<a href="#">COUNTRY MEADOWS MOBILE HOME PK</a>	LONG	57	Ground water	Active	GA1830025
<a href="#">HUCKLEBERRY MOBILE HOME PARK</a>	LONG	33	Ground water	Active	GA1830044
<a href="#">J&amp;M RENTALS</a>	LONG	60	Ground water	Active	GA1830021
<a href="#">LAND OF LAKES</a>	LONG	47	Ground	Active	GA1830041

<a href="#">MHP</a>			water		
<a href="#">LUDOWICI</a>	LONG	1440	Ground water	Active	GA1830000
<a href="#">MAGNOLIA PARK WATER SYSTEM</a>	LONG	62	Ground water	Active	GA1830034
<a href="#">MCDONALD VILLAGE</a>	LONG	50	Ground water	Active	GA1830031
<a href="#">MIDDLETON MOBILE VILLAGE</a>	LONG	60	Ground water	Active	GA1830010
<a href="#">NETTLES BRANCH SUBDIVISION</a>	LONG	70	Ground water	Active	GA1830043
<a href="#">OAK MEADOWS MOBILE HOME PARK</a>	LONG	75	Ground water	Active	GA1830024
<a href="#">OAK RIDGE MOBILE HOME PARK</a>	LONG	114	Ground water	Active	GA1830028
<a href="#">OAKDALE MOBILE HOME PARK</a>	LONG	268	Ground water	Active	GA1830007
<a href="#">PENNY ACRES TRAILER PARK</a>	LONG	63	Ground water	Active	GA1830027
<a href="#">PERSIMMON ESTATES SUBDIVISION</a>	LONG	42	Ground water	Active	GA1830037
<a href="#">PINE CREST MOBILE HOME PARK</a>	LONG	86	Ground water	Active	GA1830032
<a href="#">SANDHILL SUBDIVISION</a>	LONG	62	Ground water	Active	GA1830033
<a href="#">SANDY RIDGE SUBDIVISION</a>	LONG	49	Ground water	Active	GA1830042
<a href="#">SPRING CREEK MOBILE HOME PARK</a>	LONG	65	Ground water	Active	GA1830008
<a href="#">STEWART PINES TRAILER PARK</a>	LONG	47	Ground water	Active	GA1830029
<a href="#">TAYLORS CREEK MHP</a>	LONG	50	Ground water	Active	GA1830020
<a href="#">TWIN OAKS MOBILE HOME PARK</a>	LONG	99	Ground water	Active	GA1830002

Source: Georgia Environmental Protection Division

## **Water Supply Watersheds**

A water-supply watershed, as defined by DNR, is "the area of land upstream of a government-owned public drinking water intake". Since there are no water supply watersheds in Long County, these requirements do not apply.

## **Aquifers and Groundwater Recharge Areas**

**Groundwater Recharge Areas** are absorptive land surfaces that allow rainfall to filter toward underlying aquifers. Precipitation is the ultimate source of Georgia's fresh ground water. Recharge is the process by which precipitation infiltrates soil and rock to add to the volume of water stored in pores and other openings within them. Aquifers are soils or rocks that will yield water to wells. While recharge takes place throughout practically all of Georgia's land area, the rate or amount of recharge reaching underground aquifers varies from place to place depending on geologic conditions. Major ground water resources may develop where permeable aquifers underlie or are connected to extensive areas favorable for recharge. Their permeability and suitability for water recharge also makes them vulnerable to pollution from human activities.

Significant recharge areas for the "Miocene/Pliocene-Recent unconfined [shallow] aquifer," the uppermost strata of the ground probably not more than 75 feet below the surface, are found in a three-mile wide band that extends northward from part of unincorporated Long County. The approximate locations of the potential recharge areas are shown on the map below.

The presence of this "high susceptibility" recharge area triggers DNR "Criteria for Protection of Groundwater Recharge Areas," in the affected jurisdictions. Those rules require strict groundwater protection and provide standards for development of new sanitary landfills, disposal of hazardous wastes, new above ground chemical or petroleum storage tanks, new agricultural waste impoundment facilities, septic tanks/drain field systems for residential subdivisions and mobile home parks, and similar land uses.

**Deep underground aquifers** are water-bearing reservoirs located below a watershed recharge area, plus a distribution zone usually extending many miles beyond the watershed's seepage area. The Floridan aquifer underlying the coastal Georgia region, from which most of the region's cities extract their domestic and industrial water supplies, is an example. None of the deep water sources used by the coastal population originates in the coastal region; it comes from central and northeastern Georgia watersheds (although some domestic supply wells in rural areas do tap the pollution-susceptible, shallow aquifer).

Aquifers are susceptible to pollution from surface sources, through unplugged-wells, chemical disposal systems and similar intrusions. The real danger from surface pollution is that once polluted, an aquifer may never recover its original water quality. Inventory and assessment requirements for deep aquifer recharge areas are not applicable to the

county plan, since none are known to occur in unincorporated Long County or its municipality. However, possible surface communication to deep aquifers must be monitored.

## **Wetlands**

Wetlands serve as important fish and wildlife habitat and breeding ground, and are an integral factor in food chain production. Numerous plant and animal species have adapted to the special conditions of freshwater wetlands and cannot survive elsewhere.

Federal law defines freshwater wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Under natural conditions, wetlands help to maintain and enhance water quality by filtering out sediments and other non-point source pollutants from adjacent land uses.

Five categories of wetlands are identified in DNRs Rules for Environmental Planning Criteria as requiring protection through ordinances: open water, non-forested emergent wetlands, scrub/shrub wetlands, forested wetlands, and altered wetlands.

Land uses in wetland areas should be limited to low impact uses, including timber production and harvesting, wildlife and fishery management, and recreation. These land uses as well as others are covered in more detail under Section 404 of the federal Clean Water Act. Section 404 prohibits the discharge of dredging or fill material into the water bodies or wetlands of the United States unless a permit is granted. The United States Army Corps of Engineers (USACE) administers this program and determines if a section 404 permit should be issued by analyzing the project's impact on wetlands.

Swamps, bogs, drainage ways and perennial streams comprise the classic recognizable wetlands. There are many other identified types of wetlands. (Some ecologically important wetlands may even be dry during much of the year.) Wetlands may include, but are not necessarily limited to: Lakes, ponds, other open water, streams, rivers, creeks, intermittent streams, wet meadows, pine flatwoods, springs and sinkholes. In the southeast United States, major wetlands types include the following types:

- Bogs -recognizable by a layer of floating root masses or peat and highly acidic water
- Bottomland hardwoods -deciduous forested floodplains
- Emergent wetlands -freshwater or saltwater areas populated by nonwoody plants
- Mangrove swamps -tidal or perennially flooded coastal saltwater shrub or forest
- Marshes -flowing salty or freshwater, inland or coastal, nonwoody vegetation
- Swamps -flowing or standing freshwater, shrub and forested
- Pocosins -broadleaved evergreen shrub bogs seasonally wet
- Vernal Pools -shallow water covered during winter and spring, dry summer and fall

Wetlands are flooded or saturated by surface or groundwater often enough and long enough to grow vegetation adapted for life in water-saturated soil. Periodic or permanent wetness is the second fundamental distinction of wetlands from uplands. Acidic or hydric soil chemistry is the third principal feature.

Wetlands are valuable community ecological and economic resources as they provide the following benefits:

- Habitat for interdependent species of animals and plants
- Hydrologic balance in the total natural environmental system
- Added economic benefits from forestry activities, where permitted

Extensive wetlands, and attendant use-prohibitive rules, represent the major constraint for highway construction, urban development, agricultural and forestry land uses in the county. Current estimates indicate approximately 42 per cent of Long County's 257,363 acres (514 square miles) may be defined "jurisdictional wetlands" regulated by Section 404 of the Federal Water Pollution Control Act of 1972, Clean Water Act of 1977 amendments and related regulations. (The regulated wetlands include all fresh water marsh and swamp areas adjacent to local stream drainage ways, plus inland swamps and bogs.) Most of the county's wetlands occur in the eastern sector of the county. Other "jurisdictional wetlands" occur throughout the county at elevations of +20 to +80 M.S.L., demonstrating that a wetland is not necessarily a "lowland."

### **Protected Mountains**

The requirement to inventory and assess unique mountainous areas requiring protection from intense development is not applicable to Long County.

### **Protected River Corridors**

The requirement to inventory and assess unique river corridors that warrant special management practices is applicable to unincorporated Long County, but not to its municipality. The initial rules would regulate development in a 100-foot band along Altamaha River, which would have minor effects on the county's unbuildable floodways, and would have few impacts on the upland bluffs already developed. The River Corridor areas in Long County were thoroughly inventoried in the Regional River Corridor Protection Plan prepared by CGRDC.

### **Coastal Resources**

The requirement to inventory the ecological systems and sensitivities of identified coastal resources such as beaches, coastal marshes and estuaries, is applicable to unincorporated Long County. As much as 15 per cent of the total surface area of the county may comprise coastal marshes and estuaries. However, the geography is quite different than most coastal areas: The upland bluffs terminate at marshland margins.

Approximately 50 per cent of all the upland bluffs on marshes and rivers are already developed to low-density residential uses; the remainder being in large public and private landholdings and land conservation trusts. The bluffs are in no jeopardy of high intensity development.

All coastal marshes are protected from development by extensive, interlocking state and federal regulations.

## **Flood Plains**

Flooding is the temporary covering of soil with water from overflowing streams and by run-off from adjacent slopes. Flooding is characterized by frequency and time of year elements. Floodplains serve three major purposes: natural water storage and conveyance, water quality maintenance, and groundwater recharge. These three purposes are greatly inhibited when floodplains are misused or abused through improper and unsuitable land development. For example, if floodplains are filled in order to construct a building, then valuable water storage areas and recharge areas are lost. This causes unnecessary flooding in previously dry areas. Therefore, floodplain development is usually discouraged with exception of recreational facilities. Long County participates in the National Flood Insurance Program. Flood insurance rate maps are available for areas that participate in the Flood Program.

There are several natural physical characteristics of the land in the county which act as constraints to urban development. These factors are the characteristics of some of the soils, the topographically determined seasonal potential for flooding, and the perennially wet condition of numerous swamps and extensive lowlands adjacent to the community.

Predicted floodways, and various flood conditions and velocities, are shown on enlarged scale Flood Insurance Rating Maps (FIRM) published by the Federal Emergency Management Agency (FEMA). Although the Natural Resources map is reduced scale, it shows numerous natural drainage ways and extensive poorly drained soils throughout the county, which correlates well with the following FIRM map information:

- Storm drainage ways and floodplains vary in width, but generally have low flow rates, with bays and swamps common in outlying areas.
- Flooding during periods of excessive seasonal rainfall may be caused by, or aggravated by, buildings or other restrictions in or adjacent to floodways, and the general flatness of the terrain adjacent constructed storm drainage ways.
- Areas within the county which are subject to 100-year, or base, floods are coincident with extensive wetlands in predominately undeveloped areas and do not appear to represent general or special hazards to persons or property.
- Compliance with standard federal flood management regulations will neutralize many of the hazards resulting from the presence of floodways in the county.

## Soil Types

Soils are produced from the interaction of parent material, climate, plant and animal life, chemicals, water and physical abrasion over geologic millennia. They may have developed *in situ*, from parent materials located fairly close to their current position, or have been carried many miles from their origins by ice or marine currents.

## Soil Surveys

Knowledge of general soil and landscape characteristics is essential for determining the capability of and range of uses for any land area. Fortunately, extensive information regarding Long County's soil types, slope characteristics, general suitability of land for specified kinds of urban or agricultural uses, drainage capabilities and engineering characteristics is readily available in the "Soil Survey of Long and Liberty Counties, Georgia" (USDA 1980). The Natural Resource Conservation Service, U.S. Department of Agriculture publishes the 129-page report, which includes 79 photomaps showing superimposed soil class boundaries at a scale of 1 inch to 1320 feet.

The SCS soil survey identifies three major soil groups subdivided into 32 "series," and further subdivided into 36 soils "types." The three major soil groups in Long County are as follows:

- Well-drained soils not subject to flooding
- Poorly-drained soils not subject to flooding
- Poorly-drained soils subject to flooding

Each of the soils occurring in the Long County area have their own specific "profile," such as seasonal high water table, flooding hazard or other significant features described in detail in the soil survey. The soil survey's engineering interpretations and land usability tables are useful to planners, developers, builders, zoning officials, realtors and others identifying land for farm or non-farm uses.

In the survey, soil scientists have rated each soil for urban or agricultural use. The ratings range from "slight" and "moderate" to "severe". A rating of "slight" means limitations are so minor that they are easily accommodated by project planning and design. "Moderate" means soil properties are reasonably favorable for the rated use. Use limitations can be moderated by planning, design or careful maintenance. A rating of "severe" means the soil has one or more properties unfavorable for the rated use. Use limitations for soils rated "severe" are difficult and costly to moderate or eliminate, and may require soil reclamation, special design, or special maintenance. For some soil limitations rated severe, such measures may not even be feasible.

## General Soil Map Units

For soil mapping purposes, SCS soil scientists aggregated the 36 known soil types in the three major soils groups into 11 "general soil map units;" generalized descriptions follow:

### Well-Drained Soils Not Subject To Flooding

**Eschaw-Foxworth-Centenary:** Found as nearly level gently sloping, moderately well-drained soils that are sandy throughout. This map unit occurs mainly in south-central Long County and in adjacent Liberty County from Hinesville to the Long County line; along the coast; and on St. Catherine's Island. It comprises the mile-wide sandy ridge on which most of Hinesville, Allenhurst and Walthourville are developed; the domes at Seabrook and Colonels Island; and six-mile ridge on St. Catherine's Island. These soils are located on broad sandy ridges ranging from 20 to 70+ feet above sea level, with most slopes ranging to 5 percent. Natural vegetation on these soils are loblolly pine, longleaf pine, live oak and turkey oak. The low available water capacity makes most of this map unit moderately suited to pine woodland and as farmland. The soils in this unit are limited for urban use because of seasonal wetness. Recreation development is limited because the soils are too sandy.

**Stilson-Pelham-Fuquay:** Found as nearly level gently sloping, poorly drained, moderately well-drained and well-drained sandy soils, averaging three feet in depth. This map unit occurs mainly in western Long County on broad smooth areas, in depressions and drainage ways, and on ridgetops, usually more than 70 feet above sea level, with gradients ranging from 0 to 4 percent. Natural vegetation is loblolly pine, wax myrtle, gallberry and saw palmetto. Soil wetness makes most of this map unit moderately suited to pine woodland and as farmland, but limits its use for urban and recreational development.

### Poorly-Drained Soils Not subject to Flooding

**Mandarin-Rutlege:** Exists in only one location in Long County, west and abutting Walthurville / Allenhurst/ Hinesville/ Fort Stewart ridge. Slightly over one mile wide, elevations range from 70 to 90+ feet above sea level, with gradients ranging from 0 to 5 percent. Natural vegetation is loblolly pine, wax myrtle, gallberry and saw palmetto on uplands, with blackgum, cypress, sweetgum, pond pine and water oak on lower areas. Except on higher ridges, soil wetness makes most of this map unit only moderately suited to pine woodland, and limits its use for farmland, urban and recreational development.

**Mascotte-Pelham-Leefield:** Found as nearly level gently sloping, poorly drained sandy soils, averaging three feet in depth, this map unit represents 20 percent of the county's soils. It occurs mainly in western Long County -on broad smooth areas, in depressions and drainage ways, and on ridgetops; usually more than 70 feet above sea level, with gradients ranging from 0 to 4 percent.

Most of this unit is in pine plantations, with some cleared areas used for pasture or cultivation. Natural vegetation consists of slash pine and longleaf pine, with an understory of wax myrtle, gallberry and saw palmetto. Soil wetness makes most of this map unit moderately suited to pine woodland and as farmland, but limits its use for urban and recreational development.

**Ocilla-Riceboro-Pooler:** Comprising more than 20 percent of the county, this map unit is characterized by nearly level gently sloping, poorly drained, moderately well-drained and well-drained sandy soils. It occurs mainly in central Long County -on broad smooth areas and in depressions and drainage ways, usually 2 to 20 feet above sea level, with gradients less than one percent.

Most of this unit is in pine plantations, with some cleared areas used for pasture or cultivation. Natural vegetation consists of slash pine and longleaf pine, with an understory of wax myrtle, gallberry and saw palmetto. Soil wetness makes most of this map unit moderately suited to pine woodland and as farmland, but limits its use for urban and recreational development.

**Bladen-Pooler-Riceboro:** This map unit comprises approximately 20 percent of the county and is characterized by nearly level gently sloping, poorly drained, moderately well-drained and well-drained sandy soils. These soils occur mainly in central Long County -west of the CSX railroad -on broad smooth areas and in depressions and drainage ways, usually 2 to 20 feet above sea level. Gradients average less than one percent.

Pine plantations vegetate most of this unit, with some cleared areas used for pasture or cultivation. Natural vegetation consists of loblolly pine, sweetgum, and water oak with an understory of wax myrtle and wiregrass. Soil wetness makes most of this map unit moderately suited to pine woodland, but limits its use for farmland, urban and recreational development.

### **Poorly-Drained Soils Subject to Flooding**

**Ellabelle-Johnston-Bibb:** Poorly drained soils in depressions, bays and drainage ways characterize this soil mapping unit, which is located exclusively in western Long County, in the floodways of Canoochee Creek and Taylor's Creek on Fort Stewart, and Mill Creek and Horse Creek, between Hinesville and Gum Branch. Terrell's Millpond (Way's Millpond) is comprised entirely of the soils in this map unit. Natural vegetation consists of cypress, blackgum, sweetgum and pond pine, with an understory of wax myrtle and gallberry. Elevations range from 60 to 80 + mean sea level. Soils in this unit are well-suited for pine woodland, but unsuitable for farmland and urban uses because of ponding and flooding. Gradients average less than one percent.

**Johnson-Bibb-Osier:** This soil mapping unit consists of poorly drained soils located in the flood plain along the Canoochee River. Natural vegetation is cypress, blackgum,

water oak and tupelo. Elevations range from 50 to 60+ mean sea level. Soils in this unit are well-suited for pine woodland but not for agriculture or other uses.

### **Topography and Steep Slopes**

The topography (ground elevation) of Long County is varied. Elevations across the county range from Mean Sea Level (MSL) to 95 feet+ M.S.L. at the Long County Courthouse.

### **Steep Slopes**

Identification of steep natural slopes present in the community and a determination regarding suitability of the slopes for development is a state requirement for this Plan.

Neither unincorporated Long County nor Ludowici have any steep slope problems.

### **Prime Agricultural and Forest Land**

"Prime agricultural and forest land" are areas valuable for agricultural or forestry production that may require special land use classification, protective measures or other considerations. Most of the "prime agricultural land" identified in Long County by the U.S. Soil Conservation Service (SCS) occurs in extreme western and extreme eastern parts of the county.

Northwest of Ludowici, numerous mixed rural-urban land uses occur, where pastures and/or cropland exist adjacent of residential and other non-farm land uses.

Extensive wetlands -swamps, bogs, drainage ways and perennial streams -represent the major constraint for agricultural (and other) land uses in the county. Ironically, the best agricultural soils also support non-farm development best. The characteristics of prime agricultural land -good drainage, high relative elevation and good textural soil quality -are attributes that make those areas the most suitable for non-agricultural development and the most vulnerable to change.

"Prime forest land" is a matter of definition. Vast expanses of forest exist throughout Long County and its municipalities. The abundant woodlands result from the seasonally warm, humid climate and perennially high surface or near-surface water supplies. On the well-drained ridgeland soils, better commercial tree species include slash pine, loblolly pine, longleaf pine, red oak, and hickory. In depressions, drainage ways, bays, and swamps, common commercial species include cypress, blackgum, sweetgum, water oak, willow oak, sycamore, ash, and tupelo-gum.

Land owned or leased by pulpwood processors, private tree plots and harvests from public lands for sale to the paper mills in the region form the basis for major direct and indirect industrial employment activities.

Ludowici has many tree-lined streets and the county has extensive commercial timber growing areas, but no known forests of "specimen grade" trees or other unusual forested areas. Therefore, this issue required no further action unless such features are identified.

## **Plant and Animal Habits**

Plant and animal habitats are areas that support rare or endangered plants and/or animals. Identified plant and animal habitats of rare or endangered species in the community being planned, or which may be impacted by activities in the community being planned, require special consideration. Beyond the common public concern for protecting such habitats, federal and state laws may impose significant criminal penalties and civil liabilities for non-protective actions.

Secondary criminal and civil sanctions may also result from non-protective actions deemed to violate any coastal zone management, marshland protection, river corridor protection, soil erosion control, water pollution control or other federal, state, county or municipal regulations governing lands on which affected plant or animal habitats are located.

## **DNR "Freshwater Wetlands and Heritage Inventory Program"**

The Georgia DNR "Freshwater Wetlands and Heritage Inventory Program" has developed an inventory of the natural diversity of Georgia based on documented occurrences of plants, animals, and biological communities. Species that are especially rare, unique, or threatened are ranked on the basis of biological and geographical rarity.

The database comes from a variety of sources, including museum records, literature, and reports from individuals and therefore does not always represent the result of an on-site survey. The information provided by this program represents the data currently existing in DNR files, updated periodically. Although it is not a definitive statement of all the rare species and communities of Long County, the following list shows some of the species identified.

"US" indicates species with federal status (Protected, Candidate or Partial Status).

Species that are federally protected in Georgia are also state protected.

"GA" indicates Georgia protected species.

## **Animals**

· *Acantharchus pomotis* Mud Sunfish

US · *Acipenser brevirostrum* Shortnose Sturgeon

GA · *Aimophila aestivalis* Bachman's Sparrow

- *Alasmidonta arcula* Altamaha Arcmussel
- US · *Ambystoma cingulatum* Flatwoods Salamander
- GA · *Clemmys guttata* Spotted Turtle
- *Crotalus adamanteus* Eastern Diamondback Rattlesnake
- *Cyprinella callisema* Ocmulgee Shiner
- *Cyprinella leedsii* Bannerfin Shiner
- US · *Drymarchon couperi* Eastern Indigo Snake
- GA · *Elanoides forficatus* Swallow-tailed Kite
- *Elliptio dariensis* Georgia Elephantear
- US · *Elliptio spinosa* Altamaha Spiny mussel
- US · *Eumeces egregius* Mole Skink
- *Falco sparverius paulus* Southeastern American Kestrel
- *Farancia erythrogramma* Rainbow Snake
- *Fundulus chrysotus* Golden Topminnow
- US · *Gopherus polyphemus* Gopher Tortoise
- US · *Haliaeetus leucocephalus* Bald Eagle
- *Hybognathus regius* Eastern Silvery Minnow
- *Lampropeltis triangulum triangulum* Eastern Milk Snake
- *Micrurus fulvius fulvius* Eastern Coral Snake
- US · *Mycteria americana* Wood Stork
- GA · *Notophthalmus perstriatus* Striped Newt
- *Nycticorax nycticorax* Black-crowned Night-heron
- *Ophisaurus attenuatus* Slender Glass Lizard
- *Ophisaurus compressus* Island Glass Lizard
- *Ophisaurus mimicus* Mimic Glass Lizard
- US · *Picoides borealis* Red-cockaded Woodpecker
- *Pituophis melanoleucus mugitus* Florida Pine Snake
- *Pseudobranchius striatus* Dwarf Siren
- *Pyganodon gibbosa* Inflated Floater
- *Rana capito* Gopher Frog
- *Rana virgatipes* Carpenter Frog
- *Sciurus niger shermani* Sherman's Fox Squirrel

· *Seminatrix pygaea* Black Swamp Snake

US · *Vermivora bachmanii* Bachman's Warbler

## Plants

GA · *Balduina atropurpurea* Purple Honeycomb Head

· *Calopogon multiflorus* Many-flowered Grass-pink

GA · *Carex dasycarpa* Velvet Sedge

· *Dalea feayi* Feay Pink-tassels

GA · *Elliottia racemosa* Georgia Plume

GA · *Epidendrum conopseum* Green-fly Orchid

GA · *Fothergilla gardenii* Dwarf Witch-alder

· *Ilex amelanchier* Serviceberry Holly

· *Ipomoea macrorhiza* Large-stem Morning-glory

· *Liatris pauciflora* Few-flower Gay-feather

GA · *Litsea aestivalis* Pondspice

· *Lobelia boykinii* Boykin Lobelia

GA · *Matelea pubiflora* Trailing Milkvine

· *Peltandra sagittifolia* Arrow Arum

GA · *Penstemon dissectus* Grit Beardtongue

· *Plantago sparsiflora* Pineland Plantain

· *Platanthera nivea* Snowy Orchid

· *Pteroglossaspis ecristata* Wild Coco

· *Quercus austrina* Bluff White Oak

GA · *Sarracenia flava* Yellow Flytrap

GA · *Sarracenia minor* Hooded Pitcherplant

· *Sideroxylon sp. 1* Ohoopee Bumelia

· *Sporobolus pinetorum* Pineland Dropseed

Although Long County has no known plant and animal communities of rare or endangered species, it does not mean none exist. One species that has generated

concern is the red-cockaded woodpecker (family Picidae), which lives in old growth pines.

Continual care must be exercised to assure other future identified occurrences are adequately included in the community's comprehensive plan.

## **Parks and Recreation Areas**

Federal, state and regional parks, recreation areas and conservation areas (e.g., wildlife management areas, nature preserves, national forests, etc.) are the required subject of this section. Major federal, state and regional parks and recreation areas significantly, contribute to the "quality of life" in any community. Those types of facilities and land areas must be identified and evaluated in this Plan. [Local parks and recreation areas are identified in the Community Facilities and Services Element.]

## **Scenic Views and Sites**

Significant visual landmarks and vistas that may warrant special land use classification consideration are the required subject of this section.

The county has numerous pleasant vistas and sites, but none which warrant special land use classification.

# **Cultural Resources**

## **Residential Resources**

The Context: Long County's History

Long County is a unique coastal Georgia county whose history has been affected by geography and international politics. Its history mirrors the nation's: Indian and Colonial settlements, the American Revolution, the War Between The States, and all the military conflicts of the twentieth century. Archaeological evidence indicates Native Americans lived along the coast in 2500 B.C. Their seminomadic lifestyle was supported by abundant supplies of animals, birds and seafood -especially shellfish. Mounds of oyster shells eventually provided the aggregate for settler's "tabby" houses constructed of timber covered with a mixture of sand, lime and oyster shells.

History records the Spanish explorer Menendez de Aviles, settled St. Catherine's Island in 1565, while founding St. Augustine, Florida and Port Royal, South Carolina. Spanish, English, French and privateer forces alternately ruled the area for most of the following

two centuries, until 1733 when British General James Oglethorpe founded the Province of Georgia on the site of the city of Savannah. Oglethorpe affirmed British governance of the coast through exploration, road and fortification building, and battles against the Spanish.

Long County was founded on August 14, 1920 out of land previously belonging to Liberty and McIntosh counties. Consequently, the character of Long County is quite different than the coast.

The architecture of Long County has several discernible characteristics. Most of the houses are simple in design and ornamentation because of the rural nature of lack of wealth in the county. The Plantation Plain style is predominant including either the two-story structure with a central hall or a one-story version of the same plan. There are also many one story houses without a central hall. Outstanding examples of the Plantation plain style are the Hughes-Howard House, the Horne-Smith House and the Folsom-Coxon House. One-story examples include the Baxter House, and Sullivan-Howard House, and the Judge Price House.

A good indication of the simplicity of the building style in Long County is the very plain manner in which the churches were designed. The Rye Patch Baptist Church and the Jones Creek Baptist Church stand in marked contrast to the churches of Liberty County. The Walthourville Presbyterian Church, which is one of the three offshoots of the Midway congregation, is a notable exception.

Probably the single most important factor in giving Long County distinction is the almost universal use of the red tile roofs on the buildings. The Ludowici Celadon Company operated a tile factory in Ludowici from 1905-1914. Almost every house built during that time was covered with the red Ludowici tile.

The tile company had another quite noticeable effect in the town. Mr. Ludowici put up \$1000 to help build a new school if the town would take his name; the town agreed. Thus, Ludowici was named for a German tile manufacturer and is not an Indian name as some people have alleged.

The Cultural resources of Long County that have been surveyed include the following:

1. Walthourville Presbyterian Church Old Walthourville south of Allenhurst
2. Dr. Raymond V. Harris House, Quality Hill, S. of Allenhurst
3. William Bacon House Old

- |                                                                                      |                                                                                 |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Walthourville south of Allenhurst                                                    | 82, 5 mi. N.E. of Concord Cemetery                                              |
| 4. Norman House, Old<br>Walthourville, S. of Allenhurst                              | 15. Foster-Everett House, Dirt Road<br>behind Elm Baptist Church                |
| 5. Howard-Popell House, W. of<br>Middleton Church, S.E. Long<br>County               | 16. Tom Lee House, 1 mi. NE. of Elm<br>Baptist Church at Crossroads             |
| 6. Eason-Middleton House east of<br>Middleton Church southeast Long<br>County        | 17. Rosa Perry House, 4 mi. east of<br>Rye Patch Church                         |
| 7. Middleton-Harrison House, Ga.<br>998-1/2 mi. S.E. of Ludowici                     | 18. Hodges-Hinely House, 2-3/4 mi.<br>E. of Rye Patch Church                    |
| 8. Chapman-Smiley on 99 1/4 mi<br>S.E. of Ludowici                                   | 19. Rye Patch Baptist Church, Rye<br>Patch, 4 mi. south of Ga. 196              |
| 9. Boggs-Knight House Road to<br>Concord Cemetery 3 mi. S.E. of<br>Ludowici          | 20. Truman Garrison Cabin, 1 mi. N.<br>of Rye Patch Church                      |
| 10. C.A. Brewer House, S. of Concord<br>Cemetery                                     | 21. W. J. Garrison Cabin, Dirt Road<br>1 mi. from Rye Patch Church              |
| 11. Henry P. Brewer House, S. of<br>Cemetery                                         | 22. Macedonia Baptist Church off<br>Ga. 196, 2 mi. W. of Liberty County<br>Line |
| 12. Ellerbee House, Dirt road from<br>Ludowici to Concord Cemetery                   | 23. Pinholster-Smiley Cabin, Ga. 196,<br>2 mi. W. of Liberty County Line        |
| 13. Gaskins House, 1/3 mi. N. W. of<br>Concord Cemetery                              | 24. Hires-Blocker House, Ga. 261, 2<br>mi. south of Ga 196                      |
| 14. McGowan-Murray House, U.S.                                                       | 25. Nobles Rental House, Ga. 261, 2<br>mi. N. of U.S. 301                       |
| 27. Howard-Strickland House, off<br>U .S. 301, 1 mi. S.E. of Tattnall<br>County Line | 26. Nobles House, Beards Creek, off<br>U.S. 301                                 |
| 28. C.W. Howard, Sr., House, U.S.                                                    | 301, 2-1/2 mi. S. of Tattnall County<br>Line                                    |

- |                                                                              |                                                                                 |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 29. Mrs. Lawton Howard House, U.S. 301, 2-1/2 mi. S. of Tattnall County Line | 42. Stevens House, U.S. 301, 3-1/2 mi. N. of Ludowici                           |
| 30. Howard-Todd House, U.S. 301, 3 mi. S. of Tattnall County Line            | 43. Chapman House, U.S. 301, 3-1/2 mi. N. of Ludowici                           |
| 31. Baxter House, U.S. 301, 10 mi. N. W .of Ludowici                         | 44. Price-Chapman House, U.S. 301, 2 mi. N. of Ludowici                         |
| 32. Hampton Baxter Cabin, U.S. 301, 10 mi. N.W. of Ludowici                  | 45. Folsom Williams-Coxon Worth House, U.S. 301, 1 mi. N. of Ludowici           |
| 33. Sullivan-Howard House, off U.S. 301 at St. Thomas Church                 | 46. Johnson-Hughes House, U.S. 301, 1 mi. N. of Ludowici                        |
| 34. Parker House, Dirt Road, S. of Donald                                    | 47. Gordon House, N. end of 4th Street                                          |
| 35. Home House at Firetower, 6 mi. N. of Ludowici                            | 48. Mrs. Modie Thrasher House, Way - Street                                     |
| 36. Smith House at Firetower, 6 mi N. of Ludowici                            | 49. W.F. Chapman House, Oak Street between 3 <sup>rd</sup> and McDonald Streets |
| 37. M.F.FutchHouse, U.S.301,7-1/2 mi. N. of Ludowici                         | 50. Johnston-Chapman House State St. between Third and Main Streets             |
| 38. Jimmy Parker House, U.S. 301 7 mi. N. of Ludowici                        | 51. Baggs-Long House, Long and Main Streets                                     |
| 39. Hughes House, Dirt Road, 5 mi. N. of Ludowici                            | 52. Baggs-Smith House, Railroad St. Between Pine and Main Sts.                  |
| 40. Hughes-Howard House, Dirt Road, 5 mi. N. of Ludowici                     | 53. Mrs. R.B. SmileyHouse, Railroad Street Between Pine and Main Streets        |
| 41. Jones Creek Baptist Church U.S 301, 5 mi. N. of Ludowici                 | 54. Neill McQueen House McQueen St., west of Gazebo                             |
| 55. Gazebo, McQueen St., west of Main St.                                    | Main St. at Railroad                                                            |
| 56. Ludowici Railroad Depot east of                                          | 57. Citizen's Bank, McQueen Street, between McDonald and Main Sts               |

58. Liberty Banking Company  
McQueen Street between  
McDonald and Main Streets
59. Rimes Brothers Store McQueen  
Street between McDonald and  
Main Streets
60. Mrs. R.L. Dawson House, Celadon  
and McDonald Streets
61. Branch-Shaw Building, Main St.,  
between McQueen and Celadon Sts.
62. McQueen-Bullard House, Main  
and Celadon Streets
63. Winn-Shaw House, McQueen  
Street across from the Gazebo
64. Rimes-Smith House, McQueen St.
65. Houston House, McQueen and  
Gill Streets
66. Daniels-Gordon House, Celadon  
and Gill Streets
67. Rimes House, Celadon and Gill  
Streets
68. Ludowici Celadon Clubhouse,  
Plywood and Factory Streets
69. Brick Office Buildings S.W. end of  
Plywood Street
70. House on Factory Hill  
Street
84. M.C. Smith House, S. Macon St.  
between Church and Academy  
Streets
85. First Baptist Parsonage, Macon
71. Baggs-Howard House, Church  
and Main Streets
72. Mrs. Annie Shaw House, Church  
and McDonald Streets
73. Horne-Stafford House Church  
and Main Streets
74. Judge Price House, Academy and  
Main Streets
75. Chapman-Bazemore House  
Railroad Street between  
McDonald and Macon Streets
76. Johnston-Mitcham House, Way  
Street near Macon Street
77. Masonic Hall, Macon Street  
between State and Railroad Sts.
78. Mrs. Buford Mobley House Way  
and Macon Streets
79. Johnston-Love House, Macon and  
Railroad Streets
80. Gordon-McCollough House,  
Macon and Railroad Streets
81. Warnee-Godfrey house, Macon  
and Railroad Streets
82. Long-Gordon House Railroad St.  
between McDonald and Macon  
Sts.
83. Chapman-McCullough House S.  
Railroad Street, east of McDonald  
Street, between Church and  
Academy Streets
86. Long county Community Center  
Macon St. between Church and

## Academy Streets

87. Cohen-Davis House Macon Street between Church and Academy Streets
88. Raiford- Warren House, Macon Street, south of Academy St.
89. Board and Batten Cabin with Tile Roof, Dirt Road between McDonald and Macon Streets
90. Board and Batten Cabin, Dirt Road between McDonald and Macon Streets
91. Andrews-Smith House Dirt Road between McDonald and Macon Streets
92. Devine-Lewis House Dirt Road between McDonald and Macon Streets
93. Jerry Stapleton House south extension of Macon Street
94. Samson-Wallker House, off Ga.99 between city limits and Franklin Street
95. Freeman Fraser Rental House, Franklin Street
96. Freeman Fraser House, Dirt Road S. of Masonic Hall
97. Miles Derry House, E. Franklin Street
98. Canty-Baggs House Dirt Road off Peach Street
99. Canty-Mallard House Peach Street
100. Canty-Perry House Dirt Road off Peach Street
101. Doston-Wallker House, N. end of Peach Street
102. Thurmon-JohnsonHouse, Donald
103. Holland-Swindle House, Donald
104. Donald Baptist Church, Donald
105. Tommy Bacon House, Donald
106. Long County Courthouse McDonald Street between Boundary and Academy Streets, Ludowici- (on National Register)
107. Hall House off U.S. 301, 1 mi. N. of Ludowici
108. House, RFD 595 on Rt 196
109. House in Donald #1, 1/4 mi. N. of Donald Grocery
110. House in Donald #2, across from Donald Grocery

- 111. House in Donald #3, 1/4 mi. N. of Donald Grocery
- 112. House in Donald #4, across from Flourney Enterprises
- 113. Tobacco Barn, W. of Box 37 on Rt. 3 off Rt. 196
- 114. Log Tobacco Barn intersection of Ga. 261 and 196
- 115. Outbuildings across Ga. 196 from RFD 595
- 116. Log Cabin, Ga. 196, 2 mi. east of Liberty County line
- 117. House on Ga. 301/25, 1 mi. S.E. of Tattnall County line
- 118. "The Quarters", 6 mi. N.W. of Ludowici on Rt. 301/25

Long County  
National Register of Historic Places

Resource Name: Long County Courthouse  
Reference No: 80001107  
Address: GA 99  
City/County: Ludowici, Long Co. GA

Registration Status: Listed in the National Register (09/18/80)

Resource Name: Ludowici Well Pavillon  
Other Names: Old Well  
Reference No: 84001153  
Address: McQueen St.  
City/County: Ludowici, Long Co. GA

Registration Status: Listed in the National Register (09/07/84)

Resource Name: Walthourville Presbyterian Church  
Reference No: 87001357  
Address: Allenhurst Antioch Rd.  
City/County: Walthourville, Long Co. GA

Registration Status: Listed in the National Register (08/06/87)  
Other Action(s): Date Received (07/06/87)

Long County Georgia Historical Markers include:

### **Fort Barrington State Historical Marker**

Located on Ga. 57 approx. several yards from the McIntosh County line and 3.7 miles north of Townsend, Ga.

Approximately ten miles west of here on the banks of the Altamaha River stood Fort Barrington, a stronghold whose origin dates back to earliest Colonial times. It was built as a defense against the Spaniards and Indians and was called Fort Barrington in honor of a friend and kinsman of General James Edward Oglethorpe, lieutenant Colonel Josiah Barrington. This gentleman, a scion of the English nobility, was a large landowner in Georgia, whose home was just east of Barrington Ferry on San Savilla Bluff. Fort Barrington, which was twelve miles northwest of the town of Darien was renamed Fort Howe during the Revolution as it fell into the hands of the British.

The fort long ago ceased to exist, but the old military road which formerly ran between Savannah and Fort Barrington is still known as the Old Barrington Road. Barrington Ferry, important ferry since colonial Days, was in use until the early years of the Twentieth Century.

095-2 GEORGIA HISTORICAL COMMISSION 1954

[Note: This marker is located in Long County, 12-15 feet from the McIntosh County line. Apparently, the Georgia Historical Commission thought it was in McIntosh County and incorrectly used a marker number for McIntosh County.]

### **Historic Roads and Indian Trails State Historical Marker**

Located on U.S. 301, 1.3 miles north of Ludowici, Ga.

At this point, two historic roads, the Darien to Milledgeville and the King Road, merged to form what is now Highway 301. The Darien to Milledgeville Road, established before 1816, later became a part of the Darien to Macon Stage Road. The King Road, built in the 1820s, was a higher route leading from the Great Southern Road at the Coast into the Interior.

Here, also, the roads crossed two old Indian trails, the Doctortown Path linking Savannah with the Doctortown crossing on the Altamaha River, and the trail from Savannah to Beard's Bluff on that stream.

091-5 GEORGIA HISTORICAL COMMISSION 1958

### **Jones Creek Baptist Church State Historical Marker**

Located on U.S. 301, 5 miles northwest of Ludowici, Ga.

Jones Creek Baptist Church was constituted April 22, 1810, at the Jones Creek Meeting House near this site.

Original members of this church, all former members of Beards Creek Baptist Church were: Charles Flowers, James Clark, Levi Morgan, John Hall, John Bohannon, Martha Flower, Abigail Clark, Sarah Morgan, Fannie Lowery, Mary Howe, Mary Chapman, Lydia Bohannon.

The Rev. Moses Westberry was the first pastor of the church, and served in that capacity for 35 years.

Land for the present site of the church edifice was given by William Walthour in 1817.

Jones Creek Baptist Church was first a member of the Piedmont Baptist Association, but is now with the New Sunbury Baptist Association, of which it was one of the organizing members in 1866.

091-3 GEORGIA HISTORICAL COMMISSION 1957

### **Long County State Historical Marker**

Located at the Long County Courthouse, Ludowici, Ga.

This County, created by Act of the Legislature August 14, 1920, is named for Dr. Crawford W. Long who first used ether as an anaesthetic in a surgical operation, at Jefferson, Ga., March 30, 1842. Born in Danielsville Nov. 1, 1815, Dr. Long was a graduate of Franklin College (now U. of Ga.). Among the first County

Officers were: Sheriff W.R. Wilkinson,

Clerk of Superior Court C.W. Dawson,

Ordinary T.J. Harrington,

Tax Receiver J. McL. Cameron,

Tax Collector T.H. Smiley,

Treasurer R.D. Easterling,

Coroner L.M. Branch and Surveyor M.C. Sarrason.

091-1 GEORGIA HISTORICAL COMMISSION 1954

### **Commercial Resources**

Commercial resources available in Long County include communication, financial facilities, and public accommodations. Communication services include one local newspaper delivered once weekly. The daily newspapers delivered include the Atlanta Journal-Constitution, Savannah Morning News, and Florida Times Union. Cable Television service is available.

Financial facilities include two branch banks with \$321 million in assets.

Public accommodations include 7 restaurants, 1 motel (24 rooms), and 2 meeting facilities (largest seats 120).

### **Industrial Resources**

Industrial support services include fabricating, machining, electric motor repair at Jesup (11 miles); tool & die shop at Baxley (42 miles); and finishing, forming at Brunswick (45 miles).

### **Institutional Resources**

Institutional resources available in Long County include medical complexes, assisted living facilities, school districts, the Fort Stewart Military Reservation, and many churches.

Medical complex resources include standard services provided by Long County Health Department, one local medical doctor, one nursing home (66 beds), one mental health center, one assisted living complex (34 apartments) with one

hospital (130 beds), 44 MD's, eight dentists, one orthodontist, two optometrists, two chiropractors, one retirement home, and three nursing homes (224 beds) available in Jesup (11 miles). Also available in Hinesville (15 miles) is one hospital (50 beds), one nursing home (169 beds), 29 MD's, eight dentists, and Fort Stewart Hospital.

The school system includes public and one private school as follows:

**COMMUNITY SCHOOLS:**

2 county public schools with 118 teachers, 1,967 students, and 86 high school graduates in 2002. 1 private school with 285 students in 2003.

**HIGHER EDUCATION:**

Tech. College: Altamaha at Jesup (15 miles) with 2,012 students.

Tech. College: Savannah at Savannah (53 miles) with 3,600 students.

2-yr: Waycross College at Waycross (45 miles) with 900 students.

4-yr: Armstrong Atlantic State University at Savannah (53 miles) with 6,026 students.

4-yr: Georgia Southern University at Statesboro (56 miles) with 15,075 students.

4-yr: Savannah State University at Savannah (53 miles) with 2,560 students.

Worship resources within 25 miles are many including 106 Baptist congregations, four Catholic churches, one Lutheran church, 15 Methodist churches, six Presbyterian, four Church of Latter Day Saints congregations, and 11 Pentecostal denominations.

The northeastern tip of Long County is occupied by part of the sprawling U.S. Army installation, Fort Stewart, which also occupies significant portions of the neighboring counties.

**Transportation Resources**

Transportation resources include motor freight, rail freight, water, and air transportation corridors as follows:

**MOTOR FREIGHT CARRIERS:**

18 inter/intrastate.

**RAIL:**

CSX piggyback at Savannah (54 miles).

CSX rail at Ludowici (local).

Norfolk Southern piggyback at Savannah (54 miles).

**WATER:**

Navigable River: Altamaha (9 foot channel depth) with public barge dock at Brunswick (45 miles).

Seaport: Brunswick (45 miles) with maintained channel depth of 32 feet.

Seaport: Savannah (54 miles) with maintained channel depth of 42 feet.

**AIR:**

Commercial: Brunswick (45 miles), service by ASA.

Commercial: Jacksonville, FL (121 miles), service by ASA, AirTran, American, American Eagle, Comar, Continental, Continental Express, Delta, Northwest, Southwest, United Express, US Airways, US Airways Express.

Commercial: Savannah (54 miles), service by ASA, AirTran, COExpress, Delta, Pinnacle, United Express, US Airways, US Airways Express.

Public: Jesup (11 miles), with a 5,000 feet bituminous runway, aircraft tiedown, airframe & power plant repair, hangar, lighted runway, NDB, 24-hour attendant.

Public: Walthourville (9 miles), with a 3,700 feet bituminous runway, aircraft tiedown, lighted runway, NDB, VASI, Unicom system. Wright Army Airfield at Ft. Stewart with 2 runways (5500 ft and 7000 ft) will be open by spring 2005 for both military and private use.

### **Rural Resources**

Long County's rural features offer recreational opportunities for residents in the form of two fishing camps, one wildlife refuge, and access to the Altamaha River for swimming, boating, canoeing, kayaking, camping, hiking, hunting, fishing opportunities.

Scenic attractions include the Old Well Pavilion and Historic Jones Creek Baptist Church.

In addition, the Long County Wildlife Festival is an annual event held in October.

## **4.2.0.0: Assessment**

### **Public Water Supply Sources**

Population, housing and economic development growth is projected to increase throughout the planning period. The county will need to ensure that water needs of increased housing developments are met.

### **Water Supply Watersheds**

There are no known water supply watersheds in Long County.

### **Aquifers and Recharge Areas**

As the quantity of available water is already an issue throughout Georgia, preserving and protecting the current water supply should be at the forefront of Long County's future plans. Groundwater recharge areas may occur at shallow depths and resupply equally shallow wells within their influence. Groundwater recharge areas are much more susceptible to surface pollution than are deep aquifers. The resulting immediate public health hazards are also potentially more serious.

According to the DNR map entitled "Most Significant Ground Water Recharge Areas of Georgia" (1989; scale 1:500,000 or 1 inch:7.89 miles), a "high susceptibility areas" (DRASTIC rating of >181) is located in western Long County. Significant recharge areas for the "Miocene/Pliocene-Recent unconfined [shallow] aquifer," the uppermost strata of the ground probably not more than 75 feet below the surface, are found in a three-mile wide band that extends northward from part of unincorporated Long County"

The presence of this "high susceptibility" recharge area triggers DNR "Criteria for Protection of Groundwater Recharge Areas," in affected jurisdictions. The rules require strict groundwater protection and provide standards for development of new sanitary landfills, disposal of hazardous wastes, new aboveground chemical or petroleum storage tanks, new agricultural waste impoundment facilities, septic tanks/drain field systems for residential subdivisions and mobile home parks, and similar land uses.

Development in these areas should be limited to very low impact activities in which little to no area is covered with impervious surfaces such as roads, parking lots and building sites. The sub-surface integrity of these areas should also be maintained by avoiding development that may contaminate water supplies, such as landfills.

Because population, housing and economic development growth is projected to increase, the county will need to ensure that future development is limited in groundwater recharge areas.

Possible surface communication to deep aquifers must also be addressed. Locating, identifying and plugging abandoned wells or other potential surface pollution sources by private owners or local authorities must be aggressively enforced, to protect aquifers from pollution and/or excessive water withdrawals.

Aquifer and groundwater recharge area protection devices include Impermeable liners in new wastewater treatment basins, prohibition of storm water infiltration basins, "slow rate" land application of wastewater spray irrigation and larger required minimum lot sizes to accommodate new septic tank sewage disposal systems.

Wellhead pollution protection, prohibition of land disposal of hazardous wastes and, strict regulation of hazardous waste storage tanks are other devices for protection of aquifers and groundwater recharge areas from surface pollution. Local government will be expected to adopt adequate protection from surface pollution when more information on the subject is developed by regulatory agencies.

## **Wetlands**

Approximately 42 per cent of the developed and undeveloped urban areas, and 100 per cent of the drainage ways in Long County, may be classifiable as "jurisdictional wetlands" regulated by Section 404 of the Federal Water Pollution Control Act of 1972 and Clean Water Act of 1977 amendments. (The regulated wetlands include all fresh water marsh and swamp areas adjacent to local stream drainage ways, plus inland swamps and bogs.) Wetlands criss-cross the incorporated area, occurring most commonly along drainage ways and in extensive bottomlands and swamps.

A U.S. Army Corps of Engineers permit must be obtained prior to any construction, impoundment, dredging, or land filling activities on land classified as jurisdictional wetlands. Federal wetland development regulations contain severe criminal penalties for violation and significant civil liability may also arise from misinterpretation of on-site soils interpretations and/or off-site soils data used for permitting and construction.

Wetlands -both publicly and privately owned -possess inherent multiple ecological and economic values for the community. Wetlands protection is a major community concern.

Local wetlands regulations are available for adoption. The CGRDC developed the new, optional restrictions which local governments in the coastal region may adopt to supplement federal and state regulations. The new wetland regulations are "modular" in structure. Local governments may add more "modules," or sections, to the "core" provisions to increase their level of control.

At a minimum, adoption of a local Wetland Protection Ordinance will ensure correlation between local and federal permitting. The model ordinance requires that a local building permit applicant show evidence of a 404 permit or a jurisdictional determination before a local permit is issued. This will prevent costly (possibly for the county) mistakes where a developer or builder is given local approval to build in a wetland. However, Long County does not require permits for any building activity. This will have to be addressed before wetland permitting can be coordinated.

### **Protected Mountains**

The requirement to inventory and assess unique mountainous areas requiring protection from intense development is not applicable to Long County.

### **Protected River Corridors**

The requirement to inventory and assess unique river corridors that warrant special management practices is applicable to Long County, but the county has no known areas in jeopardy from development. All corridor areas are along the Altamaha River. The statute that is informally known as the Mountain and River Corridor Protection Act (O.C.G.A. 12-2-8) authorizes the Department of Natural Resources to develop minimum standards for the protection of river corridors (and mountains, watersheds, and wetlands) that can be adopted by local governments. The Act is administered by the Environmental Protection Division. All rivers in Georgia with an average annual flow of 400 cubic feet per second are covered by the Act, except those within the jurisdiction of the Coastal Marshlands Protection Act. Some of the major provisions of the Act include: requirements for a 100-foot vegetative buffer on both sides of rivers; consistency with the Georgia Erosion and Sedimentation Act; and local governments must identify river corridors in land-use plans developed under their respective comprehensive planning acts.

Regional Development Centers are instrumental in helping local governments enact the provisions of this Act. The Coastal Georgia Regional Development Center prepared a Regional River Corridor Protection Plan for counties within their jurisdiction. The Plan describes the ten local governments and the associated rivers that are affected by the River Corridor Protection Act, and puts forward a regional plan for the protection of river corridors. Regional plans are preferable to having local governments prepare individual plans. The plan provides for construction of road crossings, acceptable uses of river corridors, maintenance of a vegetative buffer along the river for a minimum of 100 feet from the river's edge (residential structures are allowed within the buffer zone), timber production standards, wildlife and fisheries management, recreation, and other uses. Eight coastal counties and two coastal cities (Richmond Hill and Woodbine) are affected.

Adoption of language addressing the River Corridor Protection Act is required in local comprehensive plans. Long County has formally adopted the Regional River Corridor Protection Plan and will continue to support regional efforts for River Corridor protection.

### **Coastal Resources**

Approximately 50 per cent of all the upland bluffs in the county are already developed to low density residential uses; the remainder being in large public and private landholdings and land conservation trusts. The bluffs are in no jeopardy of high intensity development. All coastal marshes in the county are protected from development by extensive, interlocking state and federal regulations.

Very little, however, is really known about all of Long County's complete coastal system. The Department of Natural Resources has developed a Coastal Zone Management Plan and is providing technical assistance to ensure that local concerns and values are incorporated into the Coastal Management Plan.

### **Flood Plains**

Participation in the National Flood Insurance Program is essential for communities located in or near flood prone areas. If a community is located in such an area and is not a program participant, federal agencies may withhold disaster relief and recovery funds from that locality. Long County experiences the type of flooding that warrants participation in The National Flood Insurance Program, and is therefore, participating at this time.

Several floodplains occur in the incorporated area, located most commonly along drainage ways and extensive bottomlands and swamps. Local flood hazard information corroborates Federal Emergency Management Agency (FEMA) and Federal Insurance Rate Map (FIRM) map information:

- Storm drainage ways and floodplains vary in width, but generally have low flow rates, with bays and swamps common in outlying areas.
- Flooding during periods of excessive seasonal rainfall may be caused by, or aggravated by, buildings or other restrictions in or adjacent to floodways, and the general flatness of the terrain adjacent constructed storm drainage ways.
- Areas within the community which are subject to 100-year, or based floods are coincident with extensive wetlands in predominately undeveloped areas and do not appear to represent general or special hazards to persons or property.

- Compliance with standard federal flood management regulations will neutralize many of the hazards resulting from the presence of floodways in the community.

The county does not have local flood hazard ordinances. This will need to be addressed before improvements in flood damage prevention can be made through the Community Rating System Program (C.R.S.P).

Long County participated in the FEMA Hazard Mitigation Planning process and anticipates formal adoption of the Long County Hazard Mitigation Plan by the end of year 2005. Specific mitigation strategies were formulated in the plan to reduce the damage of flooding events in Long County. The strategies developed by the committee include tasks such as building roads up so they won't be susceptible to flooding; identifying storm water infrastructure in need of upgrade; installing larger culverts to provide a better drainage system; considering special building codes for flood areas and update flood ordinance; update FEMA FIRM maps; and assessing storm water run-off, watershed plans and effectiveness of present drainage ditching, culverts, storm water and sanitation network.

## **Soils**

Physical location of homes, highways, industrial developments, recreation facilities and other uses requires determination of the soils suitability on each site. Soil type, slope, characteristics, drainage capabilities and engineering characteristics are essential for determining the suitability of, and capability of, land for any kind of urban or agricultural use. Extensive information regarding Long County's soil types, slope characteristics, general suitability of land for specified kinds of urban or agricultural uses, drainage capabilities and engineering characteristics is readily available in the "Soil Survey of Long County, Georgia" (USDA 1980). The Natural Resource Conservation Service, U.S. Department of Agriculture publishes the 129-page report, which includes 79 photomaps showing superimposed soil class boundaries at a scale of 1 inch to 1320 feet.

The SCS soil survey identifies three major soil groups subdivided into 32 "series," and further subdivided into 36 soils "types."

Most soils in Long County have a sandy surface layer over loamy or sandy layered subsoils, are mainly level or gently sloping broad areas drained by wet depressions, and are generally seasonally wet or perennially wet.

None of the identified soil profiles in the area represent special or significant problems; standard soil management practices are sufficient to assist use and development.

## **Topography and Steep Slopes**

Elevations across the county range from Mean Sea Level in the eastern sector, to 20 feet+ M.S.L. at the toe of the "Hinesville Beach Line," to 90+ feet M.S.L. However, the steepest gradient averages less than 50 feet per mile (or one percent). Therefore, special management practices for steep slopes are not applicable to Long County.

## **Prime Agricultural and Forest Land**

Prime agricultural and forest lands are areas valued for agricultural or forestry production that may require special land use classification consideration. Relatively small patches of the "prime farmlands" mapped by the U.S. Soil Conservation Service in Long County occur around Ludowici.

Long County and its municipalities have extensive commercial timber growing areas, but no known forests of "specimen" grade trees or other unusual forested areas.

No special problems exist in this category. Standard soil conservation activities will serve to protect the agriculture and silviculture lands in and adjacent to the city. Of course, that does not reduce local government responsibility and accountability for monitoring local activities that may adversely affect the county's environment. Long County has a local sedimentation and soil erosion control ordinance in place and is enforcing this law.

## **Plant and Animal Habitats**

Areas that support rare or endangered plants and/or animals are the subject of this section. There is some risk that once publicly identified, these unique ecological communities may become endangered by poachers or even the attention of enthusiastic environmentalists. Delineation of rare or endangered plant and/or animal species must be accomplished with considerable care, and with prearranged protective and isolative measures in place to assure survival.

Since no rare or endangered plants and/or animals have yet been identified, assessment requirements are not applicable. However, the presence of habitat for the redcockaded woodpecker may provide opportunities for environmental cooperation. Decisions concerning protection of the woodpecker will occur at the national level.

## **Parks And Recreation Areas**

Federal, state and regional parks, recreation areas and conservation areas (e.g., wildlife management areas, nature preserves, national forests, etc.) are the subject of this section. There are no state or federal parks in Long County

## **Scenic Views and Sites**

The county has numerous pleasant vistas and sites. The county needs land subdivision regulations and zoning which are valuable tools for maintaining and enhancing these, and other, valuable community scenic assets. Policies in the Land Use Element address the issue of scenic quality.

## **Cultural Resources**

Long County has an overabundance of cultural and historic resources. Continuing and improving the preservation and promotion of these historic resources would be of great value to the county. Local commitment and recognition are important and Warren County residents are aware of the rich history that surrounds them.

The three NRHP sites are of major historical importance to the county. Listing in the National Register recognizes a property's historic significance and ensures that the property will be taken into account in the planning of federally funded or licensed projects. In addition, owners of income-producing National Register listed properties are eligible for rehabilitation federal and state tax incentives. Local communities become aware of the history and architectural significance of the property, therefore encouraging its preservation.

## **4.3.0.0: Goals & Implementation**

### **Goal: Preserve and protect natural and cultural resources.**

Given the anticipated level of growth over the next 20 years, Long County will need to conserve, protect, and manage the community's natural resources.

Policy: Long County will coordinate with state and federal authorities to enforce and implement all applicable air and water quality, soil erosion, and sedimentation control regulations.

Policy: Long County will apply for funding to prepare and implement a natural resources management plan.

Policy: Long County will pursue and review alternative methods to zoning and building permit processes to manage the impact of development activities on natural resources.

### **Endangered Species**

There is a general need in Long County for more monitoring of local soil and water conservation measures, and closer scrutiny of rare or endangered plant and animal species.

Policy: Long County will participate with the detailed natural resource inventory and assessment efforts.

### **Wetlands**

Several wetland objectives need to be seriously considered. First, the county needs to coordinate with state and federal authorities to better define high value and productive wetlands; coordination with state and federal authorities is also needed to implement, all applicable wetlands and floodplain regulations. There is a need to consider a local building permitting program which would coordinate with the federal Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACoE) "Section 404" program by requiring a Corps permit -or an exemption letter -before issuing a local building permit that may impinge on wetlands. This can be accomplished through adoption of a local wetland protection ordinance.

### **Groundwater**

In cooperation with the County Environmental Sanitarian, Long County needs to identify all point-source and non-point source environmental pollution hazards, unplugged wells and other potential pollutants of groundwater recharge areas (into the shallow aquifer); the county should adopt local remedial programs and pollution control regulations.

Policy: Long County will establish a Comprehensive Water Supply Management Plan.

### **River Corridors**

All River Corridors in Long County are on the Altamaha River. Long County participated in the development of the Coastal Georgia Regional River Corridor Protection Plan and has adopted this plan by reference. Specifically, the county will adopt a local soil erosion and sedimentation control ordinance, which eliminates exemptions for residential uses.

Policy: Long County will continue to work to meet Part V of the Regional River Corridor Protection Act.

### **Flood Plains**

There appear to be no problems with loss of private property because of flooding. However, the county will continue to monitor the situation and, if necessary, consider adoption of a flood damage prevention ordinance.

### **Coastal Resources**

Long County will seek to better understand and protect its valuable coastal resources, which includes wetlands and uplands, through participation in the Coastal Zone Management Plan and the Coastal Advisory Commission.

### **Historic and Cultural Resources**

Policy: Long County will update the survey of historic resources as necessary and will participate in the update of the Regional Historic Preservation Plan.

Policy: Long County will assist in individual and district nominations to the National Register of Historic Places.

Policy: Long County will continue to promote "Heritage Tourism."

Policy: Long County will develop a Train Depot Museum.

**Long County Natural and Cultural Resource**

**Long: Report of Accomplishments**

<b>Natural and Historic Resources</b>		
<b>Activity</b>	<b>Status</b>	<b>Explanation</b>
Evaluate natural and scenic resources and regulations for protection of these resources.	Underway	
Apply for funding from appropriate sources to prepare and implement natural resources management plan.	Not Accomplished	Lack of funding.
Adopt building permit ordinance or other method for managing impact of development activities on natural resources.	Completed	
Continue participation in the Regional River Corridor Protection Effort.	Completed	
Participate in CZM panning effort. Capitalize on funding opportunity for resource planning and development.	Completed	
Adopt appropriate regulations to control soil erosion and sedimentation or continue participation in state program.	Completed	
Establish regulations to implement Part V environmental protection standards for wetlands, groundwater recharge areas, and Altamaha River corridor.	Underway	
Prepare Comprehensive Water Supply Management Plan.	Not Accomplished	Lack of funding.
Update survey of historic resources.	Completed	
Participate in update of Regional Historic Preservaion Plan.	Underway	
Assess need for local historic preservation ordinance and	Postponed	Assessment concluded that no action was warranted. Future

commission.		assessments will determine nature of future actions.
Promote "Heritage Tourism."	Underway	
Develop Railroad Depot Museum project.	Not Accomplished	Lack of funding.

### Short Term Work Program

Natural and Historic Resources				
Activity	Years	Responsible Party	Cost Estimate	Funding Source
Long County will apply for funding to prepare and implement a natural resources management plan.	2005, 2006, 2007, 2008, 2009	County	Not known	Coastal Zone Management Grant
Long County will pursue and review alternative methods to zoning and building permit processes to manage the impact of development activities on natural resources.	2005, 2006, 2007, 2008, 2009	County	None	None
Long County will participate with the detailed natural resource inventory and assessment efforts.	2005, 2006, 2007, 2008, 2009	County in cooperation with DNR	None	None
Long County will establish a Comprehensive Water Supply Management Plan.	2005, 2006, 2007, 2008, 2009	County	\$25,725	Local funds
Long County will continue to work to meet Part V of the Regional River Corridor Protection Act.	2005, 2006, 2007, 2008, 2009	County in cooperation with CGRDC	None	None
Long County will update the survey of historic resources as necessary and will participate in the update of the Regional Historic Preservation Plan.	2005, 2006, 2007, 2008, 2009	County in cooperation with CGRDC	None	None
Long County will assist in individual and district nominations to the National Register of Historic Places.	2005, 2006, 2007, 2008, 2009	County	None	None
Long County will continue to promote 'Heritage Tourism.'	2005, 2006, 2007, 2008,	Advisory Council	Unknown	Local Foundations,

	2009	Members		Local Development Funds
Long County will develop a Train Depot Museum.	2005, 2006, 2007, 2008, 2009	County	\$500,000	Local Foundations, Community support