

INTRODUCTION

The Town of Awendaw is surrounded by significant natural areas that serve as an attraction for tourists and new residents who wish to experience the outdoors. These areas range from the beautiful shorelines of the Cape Romain National Wildlife Refuge to the extensive forest of the Francis Marion National Forest. As growth from Mount Pleasant approaches the Town it will be important for the Town to balance the preservation of these natural resources with commercial and residential development.

THE LAND

Significant land resources surround the Town of Awendaw. They include:

Francis Marion National Forest

The Francis Marion National Forest is comprised of 250,000 acres of forest in both Charleston and Berkeley County. In Charleston County the Forest encompasses land from the Atlantic Intracoastal Waterway to the Berkeley County line. This forest is home to a rich variety of wildlife that ranges from otters to black bears and includes the endangered red-cockaded woodpecker. The Forest contains numerous hiking and biking trails, as well as bridle paths for horses and rough roads for motorcycles and all-terrain vehicles. Figure 5.1 illustrates the land that comprises the Forest.

Seewee Visitor and Environmental Education Center

The Seewee Center is located on Highway 17 near the center of Awendaw and was established by the South Eastern Wildlife and Environmental Education Association, Inc. The Center began in 1996 as a book sales area. Currently, the Center serves as an educational facility for visitors and school children to learn about South Carolina's natural history and heritage. It is operated by the United States Department of Agriculture and the United States Fish and Wildlife Services. Annually, there are approximately 55,000 visitors to the Center. The Center has also funded an observation blind on Bulls Island in the Cape Romain National Wildlife Refuge. The center offers a glimpse into the lives of the endangered red wolf with a live wolf exhibition of two red wolves. The South Carolina Birds of Prey offer a visiting display of birds of prey at the Center every other Sunday.

Buck Hall Recreational Area

The Buck Hall Recreational Area, located just north of the Town, is one of the highlights of the Francis Marion National Forest. It is located on the Atlantic Intracoastal Waterway and features campsites, picnic areas and boat ramps. A sea wall in the

recreational area allows visitors to view the Waterway and the Cape Romain National Wildlife Refuge. The Area also serves as the end of the Palmetto Trail.

Avian Conservation Center

The Avian Conservation Center has been established as a nonprofit conservation organization. The International Center for Birds of Prey is being established as a subsidiary of this organization through the merging of two conservation and education organization: the National Birds of Prey Center in Gloucestershire, England and the South Carolina Center for Birds of Prey in Charleston, South Carolina. The Center will be located on 152-acres of land along Highway 17 North near Seewee Road. It will offer educational programs and a display of approximately 230 birds of prey from around the world. The Center should open in the spring of 2005.

Heritage Corridor

The Nature Route of the South Carolina National Heritage Corridor runs along Highway 17 through the Town of Awendaw. The Town is located in Region 4, the Lowcountry Region of the Corridor. The Corridor goes through the Francis Marion National Forest, stops at the Seewee Visitor and Environmental Education Center and the Cape Romain National Wildlife Refuge and terminates in the Town of McClellanville.

Palmetto Trail

The Palmetto Trail is a federally designated Millennium Legacy Trail and is a project of the Palmetto Conservation Foundation. At completion the trail will include 425 miles of bicycling and walking paths in South Carolina. Currently 225 miles of the Trail are open to the public; including sections in the Town of Awendaw.

The Town of Awendaw boasts the Awendaw Connector and the terminus of the Palmetto Trail. The Awendaw Connector connects the Swamp Fox Passage to the terminus of the trail. The terminus of the trail is located on the Atlantic Intercoastal Waterway at the Buck Hall Recreational Area.

THE WATER

Parts of the Town of Awendaw are also located on or near several water resources, including:

Cape Romain National Wildlife Refuge

The Cape Romain National Wildlife Refuge was created in 1932 and is part of the Carolinian – South Atlantic Biosphere Reserve. It is located adjacent to the Town of

Awendaw and is made up of 64,229 acres; of which, 28,000 acres are preserved in the National Wildlife Preservation System. The headquarters of the Refuge are located on seven acres in the Francis Marion National Wildlife Refuge.

The habitat of the Refuge is that of a barrier island and salt marsh. It includes Bull Island, which has 34,229 acres of beach, sand dunes, salt marsh, maritime forests, tidal creeks, fresh and brackish water impoundments, and 30,000 acres of open water. The barrier island acts as a buffer between the Town of Awendaw and the ocean. The Refuge contains an abundance of wildlife. According to the Refuge, it is the largest nesting rookery for brown pelicans, terns and gulls on the South Carolina coast. The Refuge also contends that it has the largest population of loggerhead sea turtles and plays an important role in the recovery of the endangered red wolf. Figure 5.1 illustrates the area included in the Refuge.

Watershed

The Town of Awendaw is part of the Santee River Basin Watershed. The Santee River Basin extends across the Upper and Lower Coastal Plain regions and into the Coastal Zone region. According to the South Carolina Department of Health and Environmental Control, the Watershed includes approximately 1,406 stream miles, 154,853 acres of lake waters, and 18,335 acres of estuarine areas in the basin.

Water Quality

Water Quality is important to the quality of life for the Town, its residents and its visitors.

Shellfish Harvesting Water Quality

The South Carolina Department of Health and Environmental Control Shellfish Sanitation Program is responsible for classifying estuarine and riverine habitat that have the potential to be utilized for the cultivation and harvesting of shellfish. The shellfish habitat in and near the Town of Awendaw is management area #7. The immediate shoreline including tidal creeks in this area are classified as restricted areas for shellfish and the outer waters are classified as prohibited areas. In a restricted area, shellfish are prohibited from being harvested for direct marketing, except by special permit. In a prohibited area, shellfish are prohibited from being harvested for any purpose related to human consumption.

Ways to Improve Water Quality

A number of the Town's residents get their drinking water from shallow wells. The quality of this water is directly associated with the quality of the groundwater in the



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Town. Due to the declining quality of the drinking water in the Town, the Town has sought funding to create its own public water system. The Town has drilled two wells and is in the process of laying pipes for the system. The system will run throughout parts of the Town including Sewee Road and Doar Road. The water system is slated to be complete in the spring of 2005 and will be owned and maintained by the Town of Awendaw.

The amount of impervious surface in a community can be used as an indicator of water quality. Impervious surfaces are those made of asphalt, cement, and roofing materials that prevent the natural percolation of water into soil. These surfaces divert the subsurface flow of water to surface runoff. This results in flooding, stream bank erosion and a decrease in water quality. Water becomes polluted as it moves across impervious surfaces, such as parking lots, and then pollutes the body of water to which it is running.

The NEMO (Non-Point Source Education for Municipal Officials) project, a cooperative project between the Clemson University Extension Service and the SC Sea Grant Consortium, has identified several techniques to improve water quality by improving the amount and quality of runoff.



Table 5.1 : Techniques to Improve Water Quality	
Impact Fees	<i>Development Impact Fees can be imposed and applied towards provision of public facilities, i.e stormwater management facilities.</i>
Compact Development and Land Preservation Techniques	
Conservation Easements	<i>Conservation easements ensure that property maintains its natural state or present use.</i>
Purchase of Development Rights	<i>In agricultural preservation areas, the purchase of development rights allows individual farmers the opportunity to sell their development rights to the local government.</i>
Compact Development	<i>A town's regulation should permit a reduction in the otherwise applicable lot size requirements in order to preserve substantial open space on the remainder of the property.</i>
Urban Growth Boundary	<i>Urban growth boundaries are officially adopted and clearly mapped lines around urban areas that divide land uses into areas to be developed and areas to be protected for rural areas.</i>
Zoning Techniques	
Land Use	<i>Compatible and functionally related land uses may reduce dependence on automobiles and the impervious cover they require.</i>
Bonus Zoning	<i>Bonus zoning offers benefits such as increased density to developers who voluntarily meet certain performance standards above and beyond the minimum requirements.</i>
Density Zoning	<i>Density Zoning is regulation of development intensity by the quantity of development on a site as a whole, rather than by minimum lot size requirements.</i>
Infill Zoning	<i>Infill zoning promotes dense development of various land uses in and adjacent to pre-existing neighborhoods and near already established infrastructure.</i>
Overlay Zoning	<i>Overlay zones are zoning districts that impose or relax an additional set of requirements of an underlying zoning district to address special public interest.</i>
Watershed Based Zoning	<i>Watershed-based zoning uses subwatershed boundaries as the basis for future land use decisions.</i>
<i>Source: Taming Stormwater Tool book, BCDCOG</i>	

There are also several land development design techniques that can be utilized to reduce polluted runoff. These techniques are ways of improving the design standards that are used in order to improve runoff and water quality. The following is a list of the land development areas that need to be addressed to reduce and improve runoff.

- Right of way widths
- Street lengths and widths
- Setback and frontage distances
- Cul de sacs
- Parking
- Driveways and sidewalks
- Rooftop runoff
- Drainage
- Stream, River, Marsh, Wetland Buffers



Floodplain

The Charleston County Building Services is currently in the process of creating a Hazard Mitigation Plan for Charleston County. This plan will identify the hazards that may affect the county and its jurisdictions, assess the vulnerability of the population and structures of the area and identify mitigation strategies to reduce the amount of human and monetary loss that may occur during and after a hazard event. Participation in this plan is required by FEMA if a jurisdiction wishes to receive funding from the Hazard Mitigation Grant Program.

THE AIR

Climate

The Town of Awendaw enjoys the warm, gentle Lowcountry climate and good air quality.

Air Quality

Transportation and the Clean Air Act

South Carolina still enjoys some of the best air quality in the United States. Currently, South Carolina is one of the few states that meet all federal air quality standards defined in the Clean Air Act. Although this is a positive, it is important to mention that the ocean breezes of this region may keep it in attainment while transferring our air pollution to surrounding regions.

It is also important to mention that the Department of Health and Environmental Control does not monitor each county's air quality individually, but uses current monitoring stations to model the air quality for a region. Charleston County is in attainment of federal air quality standards.

THE LIVING ENVIRONMENT

Wildlife, Habitats and Vegetation

Table 5.2 is an updated list of the Federal and State endangered and threatened species of wildlife and vegetation.



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TABLE 5.2: LIST OF THREATENED AND ENDANGERED ANIMALS THAT MAY OCCUR IN AWENDAW

Status	Common Name	Species Name
Federal Endangered/ State Endangered	Shortnose Sturgeon	<i>Acipenser Brevirostrum</i>
Federal Endangered/ State Endangered	Red-Cockaded Woodpecker	<i>Picoides borealis</i>
Federal Endangered/ State Endangered	Wood Stork	<i>Mycteria American</i>
Federal Threatened/ State Endangered	Bald Eagle	<i>Haliaeetus leucocephalus</i>
Federal Threatened/ State Endangered	Chaffseed	<i>Schwalbea American</i>
Federal Threatened/ State Threatened	Seabeach Amaranth	<i>Amaranthus Pumilus</i>
Federal Threatened/ State Threatened	Loggerhead Turtle	<i>Caretta Caretta</i>
State Endangered	Gopher Frog	<i>Rana Capito</i>
State Endangered	American Swallow-tailed Kite	<i>Elanoides Forficatus</i>
State Endangered	Rafinesque's Big-Eared Bat	<i>Corynorhinus Rafinesquii</i>
State Threatened	Wilson's Plover	<i>Charadrius Wilsonia</i>
State Threatened	Spotted turtle	<i>Clemmys Guttata</i>
State Threatened	Dwarf Siren	<i>Pseudobranchius Striatus</i>
State Threatened	Least Tern	<i>Sterna Antillarum</i>

Source: Source: 2003, SC Department of Natural Resources

OVERVIEW

Natural resources are important to the quality of life of the Town of Awendaw. These resources attract visitors and new residents to the Town and may have a positive effect on the Town's economy. It is important for the Town to take advantage of these resources and capitalize on the benefits that they bring to the Town.



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Goals, Policies and Strategies

Goal: Town of Awendaw's natural resources will be protected from potentially adverse impacts of future development.

Policy	Implementation Strategies	Suggested Schedule / Responsibility
<p>A. The Town will work with citizens to identify and establish appropriate methods to protect the quality of water resources.</p>	<ol style="list-style-type: none"> 1. Consider establishment of a storm water management strategy that includes measures such as: <ul style="list-style-type: none"> • Limiting impervious surfaces and subsequent runoff, • Controlling erosion caused by permitted land disturbing activity, and • Methods used for maintenance of storm ditches. 2. Promote coordination among various agencies to ensure the highest possible water quality for Awendaw Creek, the Wando River and the Intracoastal Waterway. 3. Coordinate with appropriate state and federal agencies to enforce needed measures to eliminate adverse impacts of shrimp baiting on water quality in the refuge. 4. Coordinate with state and federal agencies to identify potential sources of nonpoint pollution in the town's waterways. 	<p>Ongoing/ Town Council, Building Official, Seewee to Santee Economic Forum</p>
	<ol style="list-style-type: none"> 5. Amend the zoning ordinance, as needed to include measures for minimizing impacts of nonpoint source pollution, such as: <ul style="list-style-type: none"> • Requiring minimum vegetative buffers or open space easements along the waterways • Establishing lower maximum densities for development along the waterways • Limiting impervious surfaces adjacent to the waterways, and • Limiting the extent of permitted shoreline development, including accessory uses such as docks. 6. Coordinate with SC DNR and DHEC to identify groundwater pollution problems to determine whether wellhead protection measures are necessary. 	<p>Ongoing/ Town Council, Planning Commission</p>



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<p>B. Town actions will support efforts of state and federal agencies to protect existing wildlife habitats within and adjacent to the town.</p>	<ol style="list-style-type: none"> 1. Coordinate with SC DNR to create an inventory of wildlife habitats in and surrounding the community. 2. Consider adoption of appropriate measures to protect habitats of endangered species within the town limits. 3. Evaluate effectiveness of existing ordinances in encouraging the preservation and replacement of indigenous vegetation species that support local wildlife within the community. 4. Town should support efforts of Avian Conservation Center (formerly SC Center for Birds of Prey). 5. Town should develop ordinance to prohibit hunting along all public roads. 	<p>1 - 2 Years/ Town Council, Planning Commission</p>
<p>C. The Town will establish and encourage development patterns that protect sensitive natural resources (land, wetlands, air quality, and noise) from adverse impacts.</p>	<ol style="list-style-type: none"> 1. Coordinate with SC DNR and DHEC to identify sources of groundwater, occurrence of saltwater, intrusion, and capacity of aquifers to determine maximum carrying capacity. 2. Evaluate and consider each soil type within the town in terms of its suitability for various land use types and capacity for septic systems. 3. Consider development and adoption of zoning and subdivision development options (i.e. cluster provisions) that buffer wetland areas identified in by the USGS. 4. Consider whether wetland areas should be included when calculating maximum densities of a parcel, review and amend the zoning ordinance if necessary for consistency. 5. Consider whether wetland areas should be developed with passive recreation uses or serve as open space, review and amend the zoning ordinance as needed for consistency. 	<p>Ongoing/ Town Council, Planning Commission</p>



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<p>D. The Town will insure that development of individual sites has minimal potential impacts of air, light, and noise in residential and natural areas.</p>	<ol style="list-style-type: none">1. Evaluate the effectiveness of existing regulations and amend, if needed, to limit the location of uses with potential for generating environmental noise to minimize impacts on natural, scenic, and wildlife areas.2. Consider adopting a lighting ordinance and screening and buffering requirements to minimize impacts of noise and lighting generated by non-residential uses on adjacent natural, scenic and wildlife areas in addition to adjacent residential uses.3. Consider establishment of a special assessment district for maintenance of unpaved roads to minimize impacts on air quality.4. Review existing ordinances for effectiveness reducing adverse impacts on air quality and noise caused by traffic on US 17, to include requirements such as tree planting and preservation or fencing.	<p>1-2 Years/ Town Council, Planning Commission</p>
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