

Chapter 3.3 Natural Resources Element

3.3.1: OVERVIEW

Natural resources are included in this Plan because of: their significant contribution to the character and quality of life in Charleston County; their local value expressed through the public input process of this Plan; their ability to attract new residents; and because South Carolina State Law requires that a Natural Resources Element be included in the Comprehensive Plan. As a steward of natural resources, the County has a responsibility to coordinate with other jurisdictions and agencies to minimize the impacts of growth on the natural environment.

A key component in protecting natural resources is the promotion of sustainable development practices and patterns. The concept of “sustainability” involves the ability of a community and society to meet the needs of the present population while ensuring that future generations have the same or better opportunities.

There are increasing concerns that, as a culture, we are using resources at a faster rate than we are replenishing them and are creating communities that are not sustainable in the long run. Charleston County seeks to progress in a manner that conserves natural

resources and minimizes degradation of the natural environment.

One of the challenges in addressing sustainability in a community comprehensive plan is that many of the issues are global in nature – air quality, biodiversity, ozone and climate depletion, food production, and others - and it is often difficult to identify how local planning policies can address these issues. It can be overwhelming for community leaders to address these issues, particularly when the community has its hands full with local development issues. However, the County believes it is important to act responsibly through the implementation of strategies to address these issues. The County aspires to “think globally, act locally,” while also recognizing that these efforts must be balanced with other local demands on government time and resources. To supplement the strategies of this Element, the County adopted an Energy Element in 2012, which includes additional strategies to promote sustainable development practices.

Element Goal

To preserve, enhance, and revitalize natural resources, such as rivers, creeks, wetlands, aquatic and wildlife habitat, beaches and dunes, groundwater, forests, farmland soils, and air quality and take actions to mitigate potential negative impacts of growth and development.

Purpose and Intent

The purpose and intent of the Natural Resources Element is to: promote protection and enhancement of natural resources in the County; sustain natural environments, habitats, and wildlife for the general health, safety and welfare of current and future generations; promote sustainable development practices in conjunction with the other elements of this Plan; protect and enhance the unique natural characteristics of the County that contribute to the County’s identity and quality of life of its residents; and support the recommendations of the Charleston County Greenbelt Plan.



3.3.2: BACKGROUND AND INVENTORY OF EXISTING CONDITIONS

Numerous agencies are involved in the protection of natural resources including but not limited to the Environmental Protection Agency (EPA), the South Carolina Department of Health and Environmental Control (SCDHEC), the Department of Natural Resources (DNR), the Office of Ocean and Coastal Resource Management (OCRM), the U.S. Army Corps of Engineers (USACE), and non-profit agencies such as the Coastal Conservation League, the Sierra Club, Ducks Unlimited, the Lowcountry Land Trust, the Trust for Public Land, and The Nature Conservancy.

Charleston County's regulatory power regarding natural resource protection is limited to land-side issues related to the impacts of growth and development on the natural environment. For example, Charleston County can and does require larger lot sizes, lot widths, and buffers for development along the OCRM Critical Line and protects greenspace through the Charleston County Greenbelt Program. The County also is responsible for the impacts of non-point sources of pollution, or runoff, on water quality through its Stormwater Management Program, an implementation of Phase II of the Environmental Protection Agency's National Pollution Discharge Elimination System (NPDES). In contrast, Charleston County is not responsible for permitting development activities such as docks or wetland filling or crossings; however, the County does regulate the land-side effects of these water dependent uses.

Water Resources

Charleston County has extensive water resources including the Atlantic Ocean, tidal rivers, creeks, lakes, tributaries, marshes, and freshwater wetlands. The Environmental Protection Agency, the South Carolina Department of Health and Environmental Control, and the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) hold the main responsibilities for establishing and enforcing water

quality goals through utilization of the 208 *Water Quality Management Plan*. These agencies monitor water quality to determine permit limits for treated wastewater dischargers and any other activities that may impact water quality. The U.S. Army Corps of Engineers has the authority to regulate certain activities in navigable waters and to protect freshwater wetlands. As stated above, the County has enacted regulations on land-side development activities to minimize the impact on water resources.

Floodplains are another important natural resource in Charleston County. Flooding in the County is principally due to hurricanes, tropical storms, and extra-tropical storms; however, it can also occur due to intense severe thunderstorm activity. Flooding also occurs from storm surge when storm tides are higher than the normal high tide. The Federal Emergency Management Agency (FEMA) has determined areas subject to flooding in the County.

Approximately 67 percent of the County is in a FEMA flood hazard area. Within Charleston County, the storm surge area encompasses most of the major rivers and adjoining estuarine marsh areas. Much of the remaining area that is not subject to storm surge is within the 100-year floodplain as designated by FEMA. The County's flood zones are shown on *Map 3.3.1: Charleston County Flood Hazard Zones*. In 2017, preliminary flood maps produced through a partnership between Charleston County Government, the South Carolina Department of Natural Resources (SCDNR), and FEMA were shared with the public for commenting. Charleston County Building Inspection Services carried out a public information campaign to answer citizens' questions about the preliminary maps. The maps are subject to review and approval by FEMA, and they are currently scheduled to be implemented in December 2018 (subject to change).

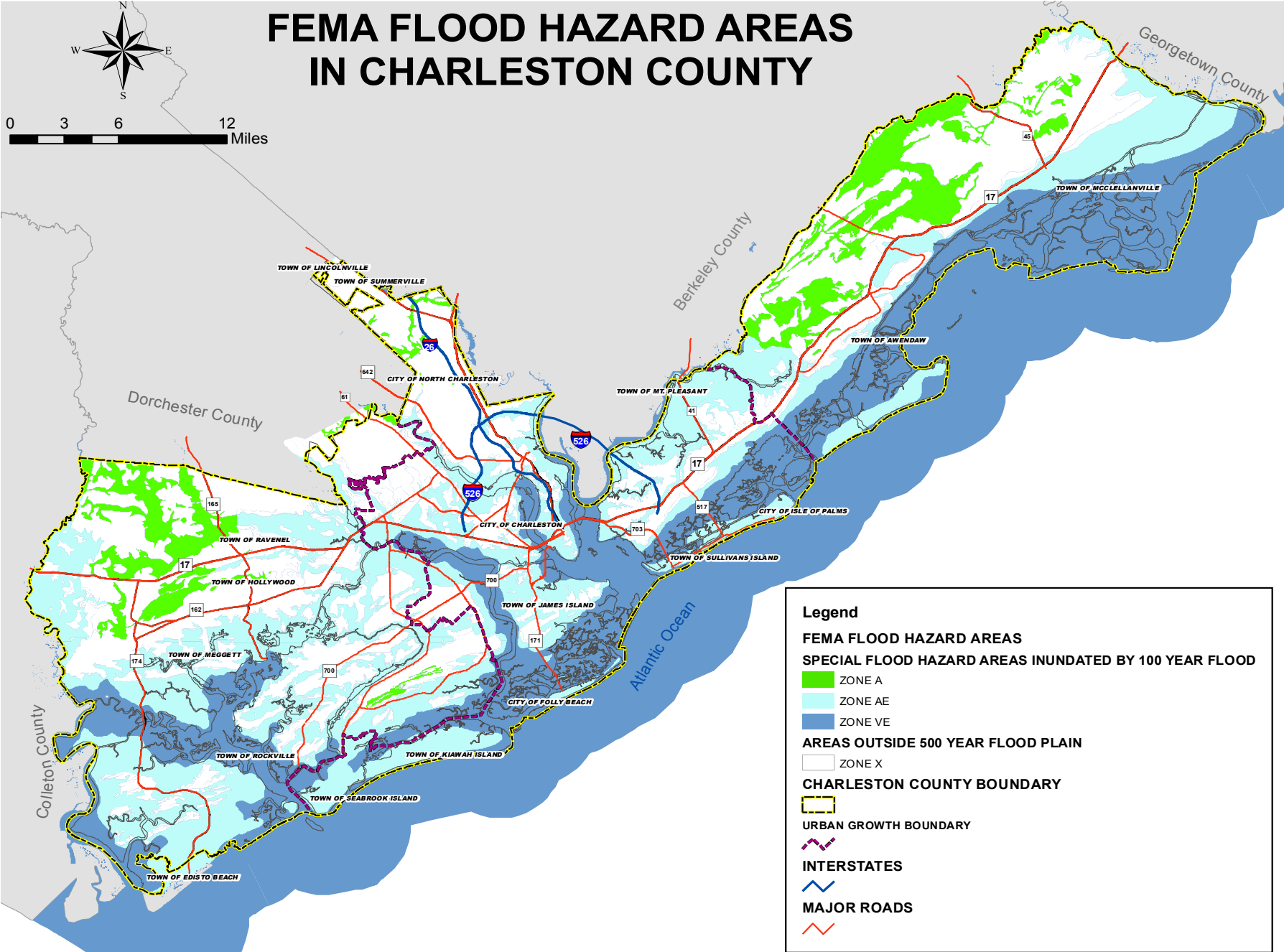
In July 2012, the United States Congress passed

the *Biggert-Waters Flood Reform Act of 2012*, which mandated changes to FEMA policies, as well as the National Flood Insurance Program (NFIP). The Homeowner Flood Insurance Affordability Act of 2014 modifies provisions of the Biggert-Waters Act and additional program changes to aspects of the NFIP. These changes most significantly impact local flood insurance rates. To attempt to mitigate not only high flood insurance costs but also the impacts of future hazards due to climate change, Charleston County continuously works with local government entities to create and implement the *Charleston Regional Hazard Mitigation Plan*, a community-wide effort consisting of input from 31 local jurisdictions that was originally adopted in 1999. These jurisdictions include 16 local government entities working alongside major stakeholders in the community, including private, non-profit, and state organizations, in addition to smaller community commissions and districts. The combined effort of all of these jurisdictions composes a regional, multi-jurisdictional mitigation plan that takes into account all visions of what concentrated efforts should be placed on specific hazards and mitigation measures. The Hazard Mitigation Plan is updated annually to address specific needs and changes in the area, and it is adopted by all participating jurisdictions on a five-year cycle. The latest Plan was adopted by County Council in 2017.

Critical Areas

SCDHEC defines "critical area" as coastal waters, tide-lands, beaches, and beach/dune systems. State law mandates that SCDHEC permit all activity occurring in critical areas, which could include building docks, bulkheads, boat ramps, dredging, or filling. With the abundance of water resources in the County, several critical areas exist and permits are issued regularly. The *Charleston County Zoning and Land Development Regulations Ordinance* (ZLDR) includes waterfront de-

MAP 3.3.1: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD MAPS, 2014



velopment standards to protect these important areas.

Aquatic Habitat

The aquatic habitats of Charleston County include coastal marine, estuarine, and freshwater ecosystems. The coastal marine ecosystem consists of tidal ocean beaches and sand bars, as well as coastal waters that extend seaward to the limit of low tide. The estuarine ecosystem extends from the ocean inland to the limit of tidal influence and the point where saltwater is measurably diluted by freshwater drainage. Freshwater ecosystems include swamps, bays, savannahs, floodplains, marshes, lakes, ponds, creeks, reservoirs, and rivers with certain average salinity levels.

Each of the aquatic habitats in Charleston County is characterized by unique hydrologic and water quality conditions, as well as biological communities adapted to survive and reproduce in those environments. Meandering shallow tidal creeks and salt marshes are dominant features of the estuaries of Charleston County, providing nursery habitat for many species of fish, crabs, mollusks, oysters, clams and shrimp. Pollutant loading from upland areas draining into tidal creeks is a water quality concern because these creeks function as direct conduits, receiving stormwater from the adjacent upland and conveying it to the larger estuarine system. Potentially toxic chemicals carried in stormwater also typically accumulate in bottom sediments, and depending upon the chemical conditions of the water, such as pH, salinity, or dissolved oxygen levels, can be released to cause unacceptable levels of some pollutants such as zinc, copper, lead and mercury. Malfunctioning septic tanks create another water quality concern. Fecal coliform and bacteria leaching into waterways can devastate aquatic systems and create unsafe drinking water and swimming conditions. SCDHEC gathers water quality data to develop

South Carolina's 303(d) list of impaired waterbodies as required by the *Clean Water Act*. This list can be found by visiting the SCDHEC website (www.scdhec.gov). The sources for impairment of waters are identified, as well as recommended corrective actions to improve water quality. In Charleston County, the leading pollutant resulting in water impairments is fecal coliform bacteria.

There are generally three types of impacts on aquatic habitats associated with human activities: physical destruction or alteration of habitat, changes to water quality, and general disruption of normal feeding and breeding behavior caused by human disturbance. In addition to activities that affect habitat conditions, human impacts include, but are not limited to, direct harvesting of species through commercial and recreational fishing and hunting.

Terrestrial Wildlife Habitat and Designated Species

Charleston County is one of the most biologically rich and diverse habitat areas on the Atlantic Coast of the United States, containing many thousands of acres of tidal marsh and freshwater swamps. Interspersed with natural wetlands are thousands of acres of impoundments created during the nineteenth century when upland areas were altered and flooded for rice cultivation. Uplands in the eastern portion of the County are dominated by the fire-dependent Longleaf pine ecosystem - one of the most diverse ecosystems in the Country.

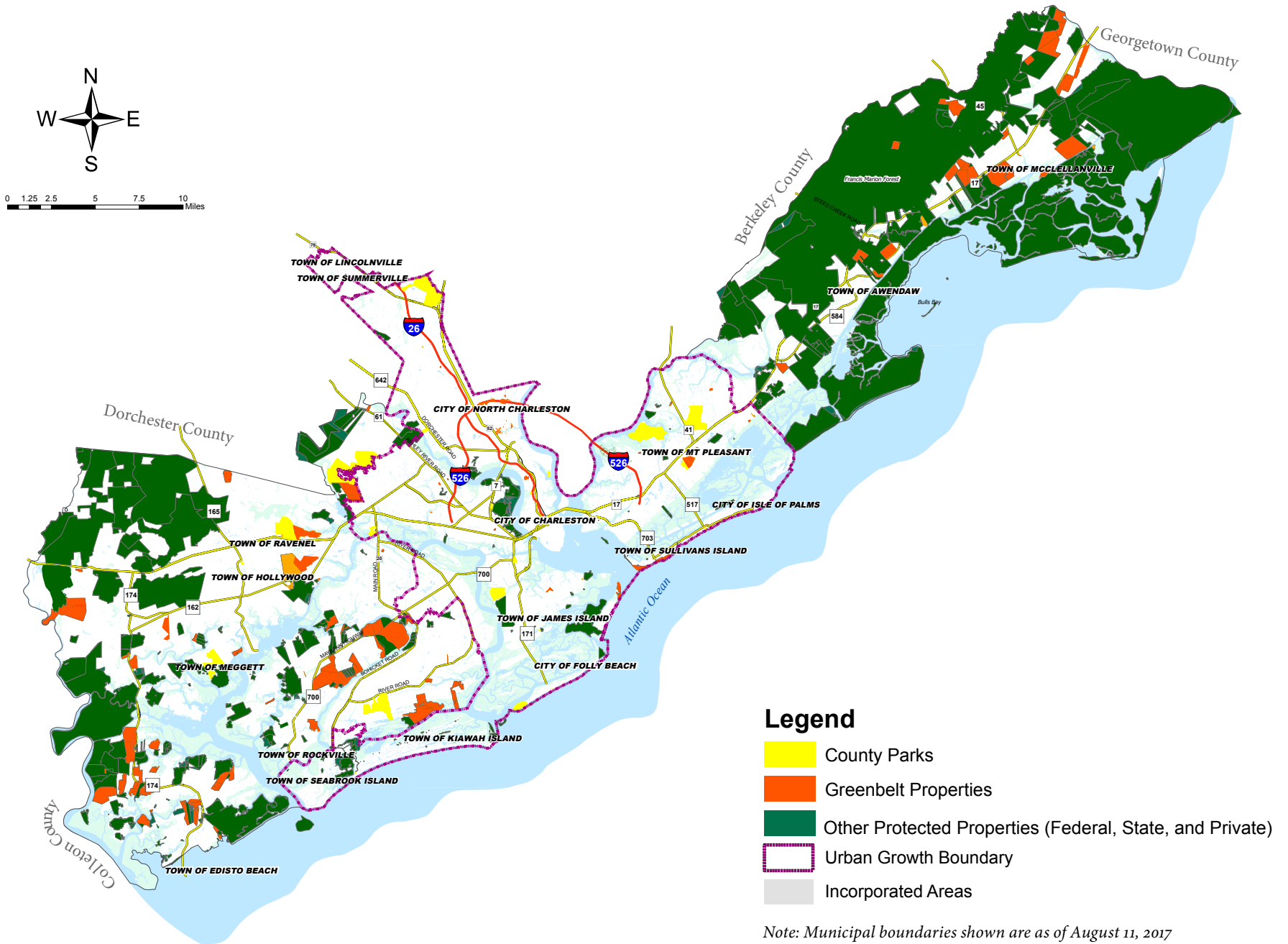
The wetlands and impoundments of Charleston County provide migration and wintering habitat for huge numbers of shorebirds and wading birds. The forested wetlands provide extensive breeding, migration, and wintering habitat for significant resident and migratory duck and geese populations. The region also provides important forag-

Conservation programs involving public-private partnerships and citizens in the County include:

- The Ashepoo, Combahee and Edisto (ACE) Basin Project;
- The ACE Basin National Wildlife Refuge;
- The Cooper, Ashley, Wando, and Stono (CAWS) Basin Project;
- The Santee Basin Habitat Protection Project;
- The Francis Marion National Forest;
- The Cape Romain National Wildlife Refuge;
- The Santee and Washo Coastal Reserve Wildlife Management Area;
- The Santee Delta-Cape Romain Unit of the Carolinian-South Atlantic Biosphere Reserve;
- The Edisto River Basin Project;
- The South Carolina Heritage Preserves; and
- The Charleston Harbor Project.

Public-private partnerships, along with the work of programs such as the County Greenbelt Program, ensure that land is conserved for green space and recreational purposes. *Map 3.3.2: Protected Lands* demonstrates conserved lands that are part of the County parks system, Greenbelt Program, or protected privately or by federal or state government.

MAP 3.3.2: PROTECTED LANDS, 2017



ing and nesting habitat for a diversity of non-game species and species designated as endangered or threatened at the federal or state levels. There are several properties protected as bird sanctuaries and other wildlife protection refuges, including, but not limited to:

- Bird Key Stono Seabird Sanctuary;
- Crab Bank Seabird Sanctuary;
- Deveaux Bank Seabird Sanctuary;
- Cape Romain National Wildlife Refuge;
- Francis Marion National Forest;
- Botany Bay Preserve;
- Dungannon Plantation; and
- Santee Coastal Reserve.

High Water Impacts

As mentioned previously, Charleston County is home to large amounts of water resources and is bordered by several bodies of water. As land development alters the topography and weather patterns change and result in higher average rainfalls, the impacts of high water from tidal changes and flooding are more evident than in years past. In the City of Charleston alone, the number of days with tidal flood events has grown from an average of two days in the 1970s to an average of 11 days in 2014. This is forecasted to grow to be an average of 180 days by the 2040s. (Source: *City of Charleston Sea Level Rise Strategy*).

Several County policies are in place to protect and manage our water resources and mitigate the impacts of high water, including the Stormwater Management Plan, Beachfront Management Plan, Hazard Mitigation Plan, and Floodplain Management Program. The County Greenbelt Program prioritizes conserving properties in flood zones. These policy decisions are mindful of the impacts of our water resources and help drive sustainable development.

In the City of Charleston, they have focused on addressing high water impacts as a result of rising sea levels, with the adoption of a Sea Level Rise Strategy. While the Strategy was adopted by the City of Charleston, the impacts are beyond the City limits and suggested strategies will impact citizens in

all parts of Charleston County. Concurrent with the City's efforts, a regional steering group, the Charleston Resilience Network (CRN), has formed and is comprised of volunteers from public and private sector stakeholder organizations. The CRN is focused on resilience of communities, critical infrastructure, and socioeconomic continuity to episodic natural disasters and chronic coastal hazards. The coordination occurring through the CRN is valuable to addressing the impacts of high water and flooding in the Charleston region.

Farmland Soils

Productive soils generally predominate over large areas in Charleston County, providing expansive areas suitable for agriculture. At the time of the Charleston County Soil Survey (USDA 1971), almost three-quarters of Charleston County's land area outside of the City of Charleston (exclusive of tidal marsh) was farmland soils, categorized by the United States Department of Agriculture as prime farmland, statewide significant soils, or unique soils.

Farm and Forest Resources

Charleston County's vision for the future clearly establishes a need to preserve and protect the community's agricultural tradition and its farm economy. The agricultural lifestyle is considered a vital element of the community's rural character and historic heritage. Today, this lifestyle and the rural countryside that supports it in Charleston County are threatened by a number of forces. The County is losing irreplaceable agricultural resources to urban sprawl at an alarming rate, with much of the new development in the County since 1982 occurring on prime farmland previously used by many generations of farmers for production of crops and livestock.

With the adoption of the *1999 Comprehensive Plan* and subsequent updates, the County has shifted significant focus on the preservation of farmland resources both through the land use plan recommendations and the current *Zoning and Land Development Regulations Ordinance*. Agriculture



Flooding and high water in Charleston County. Pictured from top: Shadowmoss neighborhood in West Ashley; downtown Charleston on King Street; and Edisto Beach. Sources: WCBD News 2; Weather Underground; and www.edistobeach.com.

and timbering activities have also been reinforced through the provision of preferential tax assessments for such activities.

While the County has done much to manage growth through this Plan, the conversion of farmland to residential use still increases pressures on the farming community, not merely by taking land out of production, but by increasing property values for uses other than agriculture. With development, and the gradual dispersal of population into the suburbs and rural areas, come conflicts between farming activities and the interests of new residents unhappy with the noise, dust, and smells of routine farm activities. As farms are sold and converted, the remaining operations become separated by new development. Additionally, as the farming community shrinks, so does its local political voice, and the chances increase that local planning and zoning decisions can be incompatible with agricultural activities.

However, sustainability initiatives, rising energy costs, and climate change predictions have resulted in a return to more local production of agricultural products. With its climate, quality soils, and ac-



cess to the unique resources of the coastal environment, Charleston County has witnessed a renaissance of agricultural production, particularly in the fields of viniculture, organic farming, artisanal meat and cheese production, and other niche markets that are supported by the sustainability movement of thinking globally and buying locally. Several organizations exist in Charleston County that focus on access and production of local food.

Other issues affecting the agricultural economy include rising land values that adversely affect the viability of farming by making it increasingly difficult for new farmers to enter agriculture or for existing producers to buy or rent land to expand operations.

Charleston County also has extensive forest resources that benefit the County's economy, its natural resource base, and its rural character. A portion of the Francis Marion National Forest is within the County, and this immense natural resource is beneficial in a variety of ways from enhancing the quality of life and providing recreational opportunities to preserving a unique ecosystem that has been present for hundreds of years. The manner in which forest land is managed has a direct influence on water quality, wetlands functionality, wildlife habitat, air quality, and scenic resources, as well as the land's long-term productive capabilities. In 2012, the Francis Marion National Forest began updating their *National Forest Land and Resource Management Plan* to comply with recent changes in federal regulations. This plan revision includes several community workshops and incorporates strategies to address challenges facing National Forests such as forest restoration, watershed and habitat protection, and effects of climate change, among other issues. A number of initiatives and state programs are in place in South Carolina today that encourage forest stewardship and the long-term sustainability of forest resources.

Charleston County Council, recognizing the importance and plight of agriculture and forestry, established the Agricultural Issues Advisory Committee (the Committee) in November 2009. The Committee is a joint effort of municipal, county, state, and federal governmental agencies, non-profit organizations, and private sector agricultural and forestry operations whose mission is to identify ways to foster agriculture and agri-business in both Charleston County and across the state. The Committee is an extremely effective advocate for preservation of agriculture and forestry in South Carolina, facilitating the flow of information and ideas between farmers, foresters, non-profit groups, private entities, government agencies, and elected and appointed officials; bringing together agricultural preservation efforts from around the state; and providing links between local producers and consumers.

The Committee's biggest successes include working with the State to establish an Agritourism and Tourist-Oriented Directional Signage Program and advocating for Voluntary Agricultural and Forestal Areas (VAFA) to conserve, protect, and maintain Charleston County's agribusiness land and facilities for the production of food and other agricultural products; reduce the loss of agribusiness resources by limiting the circumstances under which agricultural and forestry facilities and operations may be considered; and prevent the loss of agribusiness caused by common law nuisance actions resulting from nonagricultural land uses expanding into rural and agricultural areas. While Charleston County has not adopted a VAFA ordinance, several groups - including farmers, conservationists, and planners - advocate for the program.

Groundwater Resources

Many residents and businesses of Charleston County and neighboring Dorchester and Berkeley Counties are and will be dependent upon groundwater to meet their water needs. Mount Pleasant Water Works relies in large part on water drawn from wells to meet the potable water needs of its residents. In the Rural Area, residents are completely dependent upon individual wells. As demand for groundwater grows, users will be forced to compete for a shrinking portion of the groundwater resource. Because the groundwater resources are part of a much larger interrelated system of aquifers underlying 28 counties from Columbia to the coast, planning for use and protection of groundwater resources is an issue that must be addressed collectively by many communities in the State. Both SCDHEC and SCDNR are involved in the development of a coordinated groundwater protection program. The BCDCOG is the agency designated to coordinate a groundwater management plan for the Berkeley-Charleston-Dorchester Region. A coordinated effort is needed to ensure that the quantity and quality of our groundwater resources is protected.

Air Quality

Air quality is monitored and regulated by several agencies including the U.S. Environmental Protection Agency (EPA) and the SCDHEC Bureau of Air Quality (BAQ). The *Clean Air Act*, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment.

The *Clean Air Act* established two types of national air quality standards. Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare,

including protection against visibility impairment and damage to animals, crops, vegetation, and buildings. EPA has set NAAQS for six principal pollutants, which are called “criteria” pollutants. The *Clean Air Act* requires EPA to review scientific information and standards for each pollutant every five years. In 2008, EPA set new standards for ozone pollution, called primary 8-hour ozone standards, that reflect new scientific evidence regarding ozone and its effects on public health and the environment. The new standards set the ozone limit at a maximum of 0.075 parts per million¹.

The BAQ is responsible for the conservation and enhancement of air resources in South Carolina in accordance with regulations pursuant to the *Pollution Control Act*, the *Asbestos Licensing Act*, and the *Clean Air Act*. The EPA and the BAQ have implemented an air quality monitoring program throughout South Carolina that measures concentrations of major pollutants in the ambient air. The effectiveness of the State’s air quality program is measured in part by the rate of compliance with applicable statutes and regulations, and in part by the State’s attainment status for the NAAQS.

From 1999 to 2008, Charleston County experienced a degradation of air quality; however, from 2008 to 2012, the ozone level improved from 0.074 parts per million to 0.065 parts per million. In 2008, when the County had an ozone level of 0.074 parts per million, this was extremely close to the EPA limit of 0.075 parts per million. Nonattainment of NAAQS has serious implications including:

- Public health impacts such as asthmas and lung issues;
- New stringent air pollution control regulatory standards such as requirements to develop traffic restrictions to reduce nitrogen oxides and volatile organic

¹ Information obtained from EPA.

compounds from automobiles, mandated use of low sulfur fuels, carpooling or busing requirements, and reduced driving days (failure to comply with such regulations can result in withholding of federal highway construction funds); and

- Impacts to industry and economic development due to required air pollution controls resulting in increased costs for goods and/or reduced employment opportunities.

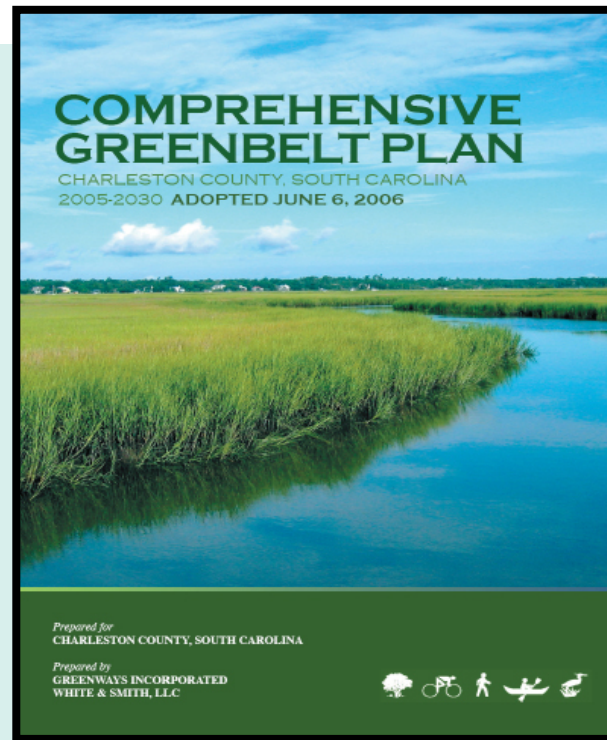
The improved ozone level in 2012 could have resulted from the *Early Action Plan* (EAP), a collaboration of the County, BCDCOG, SCDHEC, and EPA. The EAP was created in 2004, and it determines what actions must be taken at state and local levels to ensure compliance with recently adopted federal regulations regarding ozone emissions. The EAP contains a “List of Emission Reduction Strategies” that facilitate the County’s efforts to reduce harmful emissions through a series of suggested actions items.²

² Information obtained from BCDCOG.

Protecting our Natural Resources

Charleston County is fortunate to have an active conservation community, comprised of public, private, and non-profit organizations and private landowners. These groups and individuals work together to ensure the County's natural resources are preserved for future generations, and as a result of their work, Charleston County has the highest percentage of land permanently protected out of all South Carolina counties.

Recognizing the need for the County to play a more active role in conservation, County leaders proposed a Half Cent Transportation Sales Tax referendum that included funding for greenbelts. In 2004, Charleston County voters approved the referendum, and the Charleston County Greenbelt Program was created. This program set a goal to protect 40,000 acres through the purchase of land and conservation easements. Land acquisitions began in 2007 and since that time County Council has awarded \$132 million in greenbelt funds to protect over 21,000 acres. Of that total, \$114 million was spent to purchase 9,300 acres for public parks and greenspaces. The protected lands include: 8,200 acres of rural lands; 4,400 acres within the Francis Marion National Forest; 5,000 acres of wetlands; 4,850 acres for regional County parks; and 550 acres of urban lands and corridors. Greenbelt funding from the 2004 Sales Tax is nearly exhausted. County voters approved an additional Half Cent Transportation Sales Tax in 2016 with \$210 million allocated for greenbelts.



Note: The 2006 *Charleston County Comprehensive Greenbelt Plan* is incorporated into this Comprehensive Plan.

Charleston County has the highest percentage of land permanently protected out of all South Carolina counties.

3.3.3: NATURAL RESOURCES ELEMENT GOAL

To preserve, enhance, and revitalize natural resources, such as rivers, creeks, wetlands, aquatic and wildlife habitat, beaches and dunes, groundwater, forests, farmland soils, and air quality and take actions to mitigate potential negative impacts of growth and development.

Natural Resources Element Needs

Natural Resources Element needs include, but are not limited to, the following:

- Protecting and enhancing natural resources;
- Sustaining natural environments, habitats and wildlife;
- Promoting sustainable development practices;
- Promoting and protecting scenic corridors; and
- Allowing compact land use patterns to help minimize the fragmentation of natural resources.

3.3.4: NATURAL RESOURCES ELEMENT STRATEGIES AND TIME FRAMES

The following strategic actions should be undertaken by Charleston County and cooperating agencies that promote and protect natural resources in the County. These implementation strategies will be reviewed a minimum of every five years and updated every ten years from the date of adoption of this Plan.

- NR 1. Maintain the *Zoning and Land Development Regulations Ordinance (ZLDR)* to ensure that natural resources are protected prior to, during, and after development activities.
- NR 2. Protect critical natural resource areas by designating them for very low intensity uses in the future land use recommendations and the ZLDR.
- NR 3. Promote sustainable, low impact development practices including but not limited to stormwater management, green infrastructure, maintenance of vegetative cover, Critical Line buffers and setbacks, and conservation set-asides in development plans and the ZLDR.
- NR 4. Concentrate high intensity development in the Urban/Suburban Area where public facilities and infrastructure exist and low intensity development in the Rural Area to protect sensitive and unique natural resources.
- NR 5. Support the as amended *Comprehensive Greenbelt Plan* and provide incentives for protection of natural resources using methods such as conservation easements to place land into permanent protection and provide development incentives such as density bonuses for land set-asides through land development regulations.
- NR 6. Explore the feasibility of establishing a public/private/multi-jurisdictional transfer of development rights program.
- NR 7. Incorporate standards into the ZLDR to protect rural residents from the danger of wildfires.
- NR 8. Promote best management practices, including prescribed burning where appropriate, in forest maintenance, timber harvesting and agricultural production.
- NR 9. Support local agricultural and timber operations through tax relief initiatives, and explore adopting a Voluntary Agricultural and Forestal Areas (VAFA) program.
- NR 10. Protect water quality through implementation of the NPDES Phase II Stormwater Management Program.

NATURAL RESOURCES ELEMENT STRATEGIES (CONTINUED)

- NR 11. Support the BCDCOG and SCDHEC as they implement the Trident Area Groundwater Management Plan and consider integrating groundwater usage assessments into the review and approval process for large development plans.
- NR 12. Encourage sustainable landscaping that includes attractive environments that are in balance with the local climate and minimize the use of fertilizers and pesticides, while at the same time conserving water.
- NR13. Implement the *Charleston County Local Comprehensive Beach Management Plan*.
- NR14. As recommended in the *Charleston Regional Hazard Mitigation Plan*, expand the *Community Wildfire Protection Plan (CWPP)* created for the Awendaw Fire District area in the northeastern part of the County to be a county-wide plan.
- NR 15. Investigate programs such as Septic Maintenance Programs to protect water quality and provide clean and safe sewage systems to communities in the Rural Area, and educate residents in the Rural Area about well and septic system maintenance and the cost and implications of extending public water and sewer systems to rural areas.
- NR 16. Work with applicable agencies and jurisdictions to meet federal air quality standards.
- NR17. Coordinate with the Charleston Resilience Network, the City of Charleston, Sea Grant Consortium, NOAA, South Carolina Aquarium, and other public and private organizations to develop policies that encourage resiliency towards the impacts of flooding and high water, including creating a Green Infrastructure Plan.
- NR18. Continue participation in FEMA's Community Rating System (CRS) to reduce flood risk in Charleston County and decrease flood insurance costs.
- NR19. Create a new element of this Plan that explains high water impacts and identifies a goal, needs, and strategies to ensure Charleston County is resilient to flooding and high water impacts in the future.

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